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NOTES ON CEROPEGIA POWYSII

Introduction

In August 1988, on an Operation Raleigh expedition to the Mukatan Gorge, I collected two living specimens of a plant consisting of a thin leafless green stem (2 mm diameter) arising from a cluster of thickened roots. I thought this gathering might be a species of *Ceropegia* (Asclepiadaceae), and so it proved to be when the specimens eventually started to flower in my garden in November 1989. A few matching specimens were found in the East African Herbarium in Nairobi (EA), but the specimens were unnamed and were filed as the *Ceropegia* sp. A of Archer (1974). A search of recent literature on this genus showed that this species is *Ceropegia powysii* D. V. Field.

Flower colour

The original description published by Field (1982) does not mention the flower colour, apart from the hairs on the corolla lobes (small white hairs on the inner surface at the base, and long purple hairs along the margins). One purpose of the present note is to add to Field's description by recording the flower colour. The following details are from flowers on my plants from the Mukatan Gorge (*Newton 3383*, EA, K). **Corolla tube** very pale green with purplish longitudinal striations, and with scattered purplish flecks towards the mouth. **Corolla lobes**: outer surface pale green; inner surface with purple keel at base, white on either side of keel and for 0.5 mm above, the white zone bordered above by a purplish band for ca. 0.5 mm, then light green or yellow above to the apex. **Outer corona** white; **inner corona** yellow.

The effect of the purplish striations and flecks on the pale green colour of the corolla tube gives an overall greyish appearance. When the flower is open each corolla lobe is sharply folded back on itself along the midline so that the outer surface is hidden and the inner surface is conspicuously visible. On the flowers of one of my plants the colour of the greater length of the corolla lobes on the inner surface was yellow; on the flowers of the other plant this zone was light green. Notes on herbarium sheets of other specimens in E.A suggest that green is the more usual colour. Most of the small white hairs on the inner surface of the corolla lobes are in the white zone, and only a few occur in the purplish band and at the lower end of the green or yellow zone.

Distribution

Field cites only two localities for this species, both on the Laikipia Plateau. The Mukatan Gorge is a deep river gorge incising the east wall of the Rift Valley about 20 km east of Lake Baringo. This is only about 40 km from the nearer of the two localities of *C. powysii* recorded by Field, but I found the plant near the lower end of the gorge at an altitude of 1300 m, which is about 300 m lower than the other localities. The specimens in E.A were collected further south in the Rift Valley. A few other specimens in the same file in E.A, including one from near Narok, are excluded here because they lack flowers and their identity is uncertain.

The plants that I collected were growing in dense thicket lining the steep walls of the Mukatan Gorge. This is a far more shaded situation than at the type locality, where Mrs Patricia Powys had shown me this species a couple of years earlier. There the plants occur beneath shrubby *Acacia* and other plants, but the shrubs are more scattered and do not form a dense thicket. Like many members of this genus, *C. powysii* was described by Field as "rare". I suspect that "rarely seen" would be more appropriate, for these plants are not easily spotted in dense undergrowth, especially when not in flower. It is likely that they are more numerous and more widespread than it would appear from the few known collections.

Specimens in E.A.

Central Province, Ngong District, Ol Esayeti, 22 May 1960, *Archer C 22* in *Bally 12628*; Rift Valley, Magadi Road, base of Ol Esayeti, alt. 5300 ft., 24 May 1960, *Archer 320*; Rift Valley, Wanyaga, 7 miles west of Kikuyu Rly. Station, alt. 6000 ft., 23 Feb. 1964, *Archer 429*; Rift Valley Province, Baringo/Laikipia district border, Mukatan Gorge, ca. 20 km east of Lake Baringo, ca. 00°38'N, 36°17'E, alt. 1300 m., 27 Aug. 1988, *Newton 3383*.

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Archer, P.G. 1974. *Ceropegia*. In A.D.Q. Agnew, *Upland Kenya Wild flowers* pp. 389-392. London: Oxford University Press.

Field, D,V, 1982. Two new African species of *Ceropegia* (Asclepiadaceae) and a reconsideration of *C. subaphylla*. *Kew Bulletin* 37: 305-313.

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NOTES ON A VISIT TO UKWIVA FOREST, TANZANIA

The Ukiwva forest on the west facing slopes of the Rubeho mountains is one of the largest forest reserves in Tanzania, but is one of the least known biologically. It is about 78,000 hectares covering the rolling uplands of the Pala mountains, dropping down the eastern escarpment towards the Kilosa - Mikumi road. The western edge of the forest (ca. 7°10'S, 36°40'E, alt. 1,600 - 1,700 m) was visited from the village of Ulelingombe.

At one time elephant and buffalo were common in the forest. A missionary told me that in the past elephant were so numerous that it was dangerous to go out into the fields until after midday when the elephants had returned to the forest. During the two days we spent in the forest there was no sign of either elephant or buffalo, though there were numerous signs of bush-pig. Blue monkeys were seen, and Black and White Colobus were reported by the local people, though they were reputed to be rare.

The area of forest that we saw was on an undulating plateau and was all secondary with many signs of past inhabitation, such as cultivation ridges, pot shards, and spoil pits from house building. We did not see the forest on the escarpment. The people living at Ulelingombe are Wahehe who fled from Iringa following the German attack in 1894. They told us that the people who used to live in the area which is now forest were the Wakwiva, but they had gone before the Hehe arrived.

Current local exploitation of the forest is limited to occasional hunting and honey gathering. There was very little sign of building pole collection, and no sign of timber cutting.

VEGETATION

Woodland between Ulelingombe and the forest edge included the trees : *Acacia* sp., *Brachystegia spiciformis*, *Cussonia arborea*, *Erythrina* sp., *Faurea speciosa*, *Protea madiensis* with *Croton macrostachyus*, *Myrica salicifolia*, *Uapaca kirkiana* on the ridges, and *Syzygium cordatum* in the valleys.

The forest edge appears to be maintained by fire, with some areas of bracken and others of regeneration.

The forest canopy was 10-15 metres high in valleys, and 3-5 metres on ridges. Climber tangles of *Toddalia asiatica* and *Embelia schimperi* were common. The largest trees were

Macaranga kilimandscharica which reached 50-60 centimetres diameter, except for occasional *Ficus* which the local people said were relicts of cultivation, and one large *Parinari excelsa* which branched low and did not have the form of a forest grown *Parinari*. Towards the east, just above the escarpment, there were many 2-3 metre high poles of *Parinari*. A *Cyathea* grew in the stream valleys.

Other trees included: *Agauria salicifolia, Aphloia theiformis, Bridelia micrantha, Catha edulis, Diospyros whyteana, Halleria lucida, Maesa lanceolata, Maytenus acuminata, Nuxia congesta, Polycias fulva, Rapanea melanophloeos* and *Xymalos monospora.*

The area of the Ukiwiva forest that we visited has been regenerating from disturbance following cultivation for at least 100 years, yet it does not contain any trees of timber value. Both *Ocotea usambarensis* and *Podocarpus* would be expected in a forest at this altitude. It thus appears natural regeneration of moist montane forest following heavy disturbance is very slow.

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SOME NOTES ON A VISIT TO SELEGU MOUNTAIN, TANZANIA

Selegu mountain (altitude 2,454 m. 7°29'S, 36°10'E) is a huge ridge running north - south lying at the north-eastern end of the Uzungwa range just north of the Kitonga gorge and south of the Great Ruaha River. Much of the mountain is covered by the Image Forest Reserve. The Western slopes are miombo woodland, giving way to grassland with forest patches at 2,200 m., and moist forest on the wetter eastern slopes and rivers draining eastwards into the Ruaha.

The most striking feature of the mountain is the huge rock faces and boulders on the western side. These rocks are covered in a thick layer of epiphytic lichens, orchids and ferns, indicating a high mist cover. *Hagenia abyssinica* is cut for timber by pit sawing, with huge stacks of planks being made on the grassland at the top of the mountain before being transported in head loads down the steep western slopes.

VEGETATION:

Western slopes: At 1,800 to 1,900 metres *Brachystegia spiciformis, Protea, Uapaca kirkiana* woodland becoming *Brachystegia, Myrica, Phillipia mannii* woodland before it gives way to grassland with forest patches at 2,200 m.

Epiphytic and lithophytic orchids include: *Bulbophyllum sandersonii, Rangaeris muscicola, Tridactyle terctifolia* and *T. verrucosa.*

At 2,200 to 2,400 metres grassland species include: *Crytanthus breviflorus, Dierama pendulum, Disa nyikensis, Eolophia clavicornis, E. rara, Impatiens gomphophylla, Justicia uncinulata, Lobelia goetzei, Moraea iringensis, Oldenlandia rupicola.* Fresh buffalo dung was seen at 2,300 m.

In the grassland, forest patches contained the trees: *Aphloia theiformis, Cassipourea gummiflua, Hagenia abyssinica, Maesa lanceolata, Myrica salicifolia, Podocarpus latifolius, Rapanea melanophloeos* and *Syzygium cordatum.* Epiphytic orchids include: *Microholmeria parva, Mystracidium pulchellum* and *Polystachya transvaalensis.*

Eastern slopes

At the top of the forested eastern slopes at 2,200 metres are the same species as found in the forest patches with: *Croton macrostachyus, Ixora scheffleri, Macaranga kilimandscharica* and *Rawsoniia reticulata.* With the shrubs: *Coffea mufindiensis, Lasianthus kilimandscharicus* and *Pavetta kyimbilensis.*

It was not possible to visit the main forested area.

Riverine forest on the base of the eastern slopes at 850 m. contained the trees: *Afrosersalisia cerasifera, Antiaris toxicaria, Bequaertiodendron natalense, Diospyros zombensis, Milicia excelsa* and *Parkia filicoidea.* The orchid *Disperis leuconeura* grows on rocks in the stream, and this is the most northerly record. The surrounding woodland at 1,200 metres was *Brachystegia/ Pterocarpus* and at 1,400 metres was Monote/Ozoroa.

Northern end

At one time the northern end of Selegu was accessible by vehicle, but the bottom part of the road is now washed out. Old logging roads can still be seen in the forest.

Tree clumps in grassland at 2,000 metres include the trees: *Acokanthera laevigata, Bersama abyssinica, Cassipourea malosana, Cussonia spicata, Ekebergia capensis, Maesa lanceolata.*

On large rocks adjacent to the forest there is a scrubby sward of the ancient and curious *Myrothamnus flabellifolius.*

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OL JORO OROK AND ITS FORESTS

This account deals with the forest areas which fell within the boundaries of Rhiwerfa and Carlingford Farms prior to 1963. Much of this has been changed through widespread settlement and some idea of its original fauna might be of interest.

'Our' forests were located 6 km south of the Equator on the west side of the Ol Joro Orok road about one mile from the former station. Originally there was also an area of 'cedar' Juniperus procera forest on the east side of the road from Ol Joro Orok township stretching about one kilometre along the Nakuru road. This was contiguous with forest areas on adjoining farms to the south.

The forest area of Rhiwerfa covered about 200 hectares and was virtually untouched by any development except for the construction of two dams, one of which failed, and a weir on the main Oramutia River to provide domestic water to the farm above via an hydraulic ram. Besides the main Oramutia River which rose in the Lolderodo heights near Dundori, the forest contained one permanent spring; the stream from this eventually joined the main river after traversing a steep, deep gorge. This Rhiwerfa forest extended into Carlingford Farm particularly along the river.

The rivers and stream were never known to fail during the years up to 1963. The altitude ranged from 2,600 m to just under 3,000 on the 'top' or west boundary. The forest was typically highland type dominated by East African 'Cedar' *Juniperus procera* and Olive.There were also tree heaths on the eastern bank of the Oramutia.

In some parts the 'cedars' had died back creating slightly more open areas but most of the forest was well wooded with thick understorey and undergrowth.

There were many indigenous flower species including orchids; John Williams discovered a new orchid genus in the forest which was unique in many aspects, it is now at Kew.

In previous centuries, this forest evidently was part of a continuous area of tree growth extending from Mt. Kenya and the Aberdares to the Mau and beyond with possible small breaks in the Rift Valley and the minor valley containing the lake Ol Bolossat.

Near Carlingford Farm there was a tree which bore strong evidence of being rubbed by elephants and several local Africans remembered them in the forest on the move westwards from the Aberdares.

There were at least three Leopard lairs and Servals could often be seen in the forest glades. There were plenty of fish in the river and Otters were said to have always been there. In 1942 I married into the family owning both Carlingford and Rhiwerfa and between 1947 and 1961 I spent many hours wandering and sitting down studying its birds armed with a small telescope at times but always with my superb Habicht (Swarowski) 8 x 30 binoculars and notebook. I knew every inch of the area and the breeding sites of many of the birds were well known to me.

Every day I spent at Ol Joro Orok included a walk into some part of the forest and there was always the accompaniment of the song of Hill Babblers or the calls of the two or three troops of the magnificent Colobus Monkeys. Sadly, my detailed dairies covering much of this period were lost/stolen during one of our many house moves in Kenya. Nevertheless, I feel it is worth recalling as many incidents as I can remember at this long distance of time.

Augur Buzzards bred each year both in the Rhiwerfa forest and on the eastern edge of the Carlingford forest; their cries could be heard well above the canopy throughout the day. One particular pair were both part melanistic, one being almost wholly so whilst the mate still retained some white mottling on the belly, both had the ubiquitous chestnut tail. The immatures could be slightly confusing in being browner with a brownish tail with close barring.

A rare treat was the occasional sighting near the eastern part of the forest edge of the Mountain Buzzard. The bird we usually saw had had a well defined chest 'ring' and seemed to be slightly more lethargic than the Augurs. In the forest glades towards the top of the farm one often came across parties of 2 to 6 individuals of those delightful little finches, Salvador's Crimson-wing (now called Abyssinian Crimson-wing). Their nests were balls of grass with entrances towards the top on one side usually built low down in a bush or low tree.

I was always excited in entering this 'top' part of Rhiwerfa forest as so many rarely seen birds often turned up there. I am sure that the Bar-tailed Trogons nested there as I saw pairs of these gorgeous tree-top hugging bird several times, always within the same small area near the source of the little stream which ran eastwards through the forest. Although their colours were startlingly beautiful they were difficult to pick up in the gloom of the forest canopy; their crimson bellies or their lowish 'how how' calls often gave them away. They seemed to be able to stay quite still for long periods occasionally moving their tails up and down when they called.

One day in December 1953 whilst looking for the trogons I heard a curious loud 'whirring' sound rather like the old-fashioned football supporters rattle and then I saw an almost blackish bird, streaked white beneath and with a white patch on the back. On closer inspection it had a remarkably broad bill giving a comical look when seen head-on; this was this comparatively uncommon Broad-bill. This whirring whilst flying round in circles is apparently a courtship display. Although I traversed the area several times each week when at the farm, I never saw one again.

Bird parties were a common occurrence in the forest particularly along the river. The parties included White-bellied Tits, Chestnut-throated Apalis and White-eyes. The Apalis was a particularly enchanting little bird as it used to inspect the outer twigs of trees and bushes by working right round them.

It was interesting to note that often such foraging bird parties would suddenly stop all activities with the birds melting into the background, completely motionless - this was invariably due to a bird of prey overhead or nearby, sometimes it was an African Goshawk or a Great (Black) Sparrowhawk, but on two occasions the same effect was produced by a Harrier Hawk (or 'Banded Gymnogene'). The ubiquitous Augur Buzzards or Tawny Eagles had apparently no such effect on the smaller birds' activities. A common breeding bird in both the Rhiwerfa and Carlingford forests was Hartlaub's Turaco. Their courtship antics were amusing to watch as they chased one another up and down branches displaying their coppery red wing patches and agitating their dark blue crests. The nests were always unsubstantial affairs, usually so loosely constructed that their dull white eggs could be seen from below! Their rattling calls are one of the most nostalgic sounds.

The other equally, if not more so, nostalgic sound penetrating even the depths of the forests were the bell-like notes of the wonderful duetting Tropical Boubous. They tended to keep to the more open bush areas on the forest fringes where they bred each year, usually in fairly large dense bushes. I noticed that small birds sometimes became agitated in the presence of these Boubous occasionally 'mobbing' them.

Another bird which causes disturbance whenever it is seen in the forest (which is rarely) is the Cuckoo Falcon or Cuckoo Hawk. In January 1948 I think a pair must have bred as two adult birds were often accompanied by a juvenile. Subsequently their appearance was spasmodic.

I always hoped we should have the magnificent Crowned Eagle breeding in our forest but although they were often seen circling high above, I never saw one actually in the forest. On the other hand, Martial Eagles were frequently seen and one, a magnificent adult was caught by the foot in the wire netting surrounding a chicken run; it was released with great difficulty having been cheated of its prey. This is one of the many examples of the richness of Ol Joro Orok in having several types of habitat within a small area. The farm itself had forest, riverine forest, open grasslands, swamp area and light bush. It was also a meeting place between birds of northern Kenya and those of the south. An outstanding example was the occurrence of both the Ground Hornbill from the north at varying times during the year and the Abyssinian Ground Hornbill usually arriving in the drier months from December to March.

Flycatchers were well represented including the Paradise which nested regularly in the Carlingford forest. they were the chestnut variety and not the white which were more common around Nairobi.

The White-tailed Crested Flycatcher which was common in the forest near the river caused some confusion as the then available references said that this was a western Kenya species, the one in the Rift Valley areas and east was the Crested Flycatcher. Now, however, this has all been sorted out and the distribution of the White-tailed now covers central Kenya at greater altitudes than that of the closely related Crested.

Flycatchers of many species were often members of the foraging bird parties to which I have already referred.

In three successive years, 1958, 1959 and 1960 I heard the distinctive call of the Green Ibis, a mountain species whose call is dissimilar to that of the common Hadada which does not like forests. Several time I caught sight of this dark coloured bird, usually with another, with a well marked crest, flying up and down the river valley in the forest. Eventually a nest was found in August 1960 (as far as I can recall): a loose stick platform on the branch of a tree on the west bank of the Oramutia River. The call seemed to sound like 'Harara Harara". There were many other wonderful birds in our forest which would take a small book to record adequately.

This note has been written to describe, albeit briefly, what a well-watered Laikipia Forest at about 2,000 m was like. Sadly all is now changed. The important aspect is that it was a remnant montane forest, part of a much greater one which stretched with a few breaks from Mount Kenya westwards to Mount Elgon.

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VEGETATION CHANGES IN THE NORTH LIKI VALLEY MT. KENYA

In August 1989 I visited the North Liki Valley on Mt. Kenya for the first time since December 1957, nearly 32 years ago. There were obvious changes in the vegetation and so, remembering that I had a photograph from the first visit (taken by my companion Rodney Hall, now an Australian) I took some new photographs for comparison.

A striking feature of the valley today is a large area of dead, whitened, and mostly fallen trunks of *Senecio keniodendron* (the giant groundsel) on the northern slope above the lower terminal moraine. The old photograph confirms my memory of a particularly dense 'woodland' of *S. keniodendron* in that area, and that they were all very large trees.

A further change in this area is that, whereas the ground cover amongst the trees comprised the giant grass tufts which makes walking so difficult off the path (there was no path in 1957) it is now almost pure *Alchemilla argyrophylla.* It is particularly noticeable that there are no young *S. keniodendron* amongst the *Alchemilla* although there are plenty elsewhere in the grass, so that one gets a strong impression that *Alchemilla* may be blocking regeneration of the woodlands.

These changes are definitely not due to human intervention and I have a very strong feeling that I have witnessed, in 32 years, a small part of a long, regular, natural, cycle. I want to go back in 100 years time - if the 'greenhouse' hasn't messed things up by then.

Alex MacKay, National Museum, Nairobi.

A FURTHER NOTE ON THE NORTH LIKI VALLEY

This is a truly delightful place which is comparatively easy to get to, even for the not-so-young-as-we-used-to-be's. The National Park road has mostly a firm rocky foundation (a further striking change, due this time to soil erosion) and with a 4WD vehicle one can usually reach a good campsite at about 3,600 m altitude. The N. Liki Valley is about 4,360 m which is a pleasant day's walk. The 'Bantu Lodge' has a permanent camp not far from the 3,600 m site so it should be easy to arrange porters if wanted

The valley floor is a flat silt bed dissected by a beautiful little stream for about 1.5 km above a terminal moraine, so that there are any number of excellent campsites. There are many interesting and scenic walks from here, but if you just want to sit by the stream you will be entertained all day long by the hill chats, seed eaters, swamp rats *Otomys*, hyrax and other nice beasties.

You can use the rather dilapidated hut by arrangement with the Mountain Club of Kenya, but you never know when you might be packed in like sardines amongst unscheduled visitors, so it is better to be independent. It is very very VERY cold at night!

Alex and Joy MacKay, National Museum, Nairobi.

AN APPARENT CONFUSION:
COULD A GREAT SPARROWHAWK MISTAKE AN IMMATURE AFRICAN GOSHAWK FOR ITS OWN KIN?

The afternoon of 23 September 1989 was one of the first sunny, warm occasions of the year. I sat at my desk in Kiambere Road (on the 'Hill'). The bird tray hanging in front of the window was full of the usual visitors. Both kinds of sparrow, Streaky Seedeater, Baglafecht Weaver, African Firefinches and many Grosbeak Weavers. Laughing Doves were walking up and down the window-sill. As usual the commotion was great.

Suddenly there was silence and all the birds disappeared. It was 15.00 hours when I looked up from my work. Opposite and slightly above the window, less than 10 m away from my position there sat in a branch of my pepper tree, a large, brownish bird of prey. I had little doubt that it was an immature African Goshawk - I have seen African Goshawk in my garden before. The bird sat quite still and exposed in excellent light, I looked at it with binoculars and was satisfied with my identification.

A few Black Kites came to investigate the visitor but they disappeared too when I heard the call of a Great Sparrowhawk. I thought it was my parrot, Sussi calling, she learned the call in Karen, in the Mwitu Forest and has kept it in her repertoire even though we have lived on the hill for five years now. Then it occurred to me that lately I might have heard this call quite often? At that moment a Great Sparrowhawk landed in the pepper tree on a branch adjacent to the other visitor, a very good looking adult Great Sparrowhawk *Accipiter melanoleucus!*

This was the first time I have seen this hawk on the Hill, the nearest place where I have known it to occur is in the forest in the Nairobi National Park, some 5 - 6 km from my house, but here it was: and what was it doing?

It crouched, let its wings hang as it ran up and down the branch. Although silent, it went through the motions of begging, facing the other bird. Again the sparrowhawk call came from the other side of the house - where Sussi is the dominant feature. The Sparrowhawk prostration took about 2 - 3 minutes. Meanwhile, my immature Goshawk (by this time I doubted its identity) sat motionless except for turning its head so as to keep the Sparrowhawk in focus. The Sparrowhawk was about 5 metres from it. The immature bird, sitting upright, seemed to me to be of the same size as the crouched bird and I was frantically looking for some reference points on the tree for size estimates when the Sparrowhawk departed. There were a couple more calls from behind or above the house and then everything was silent. I dispatched Alex, the gardener cum apprentice birder, to check on all the trees at the back - but he did not see any raptors (and he is good at spotting birds).

My original bird still sat on the same branch and started to preen. With Alex keeping an eye on it, I now fetched Brown, Urban & Newman and made a systematic comparison of the pictures and the descriptions of *melanoleucus* and *tachiro*. The pictures did not help much. The preening bird kept conveniently turning and I was able to see that the back was rufous brown and there were perhaps a dozen or so rather concealed white feathers on the nape and scapulars. Below it was brownish buff with relatively more white on the chin and on the vent and more buff on the breast with bold blackish, distinctly drop shaped markings. The feet were yellow as was the cere. The tip of the bill was brown, so was the iris. As to whether the yellow was greenish or lemon, I would not know.

By this time I had realised that the size would be the most important criterion for identification (little did I know at that time how much more confused I would be when I had read up everything on the matter in my books; now I have tabulated all information from Williams; Roberts; Newman; Mackworth-Praed & Grant; Brown; Brown, Urban & Newman and I still think that all things considered, size holds the answer to the riddle - but at the material time I did not know all this).

I tried to take some comparative measurements using the pepper tree's leaf as a unit. I thought my idea was brilliant and thus I did not notice that a female or immature (lets leave it at that) Grosbeak Weaver had alighted on the tray. But my hawk did and next I thought it would smash through the window! The weaver saw it coming too, it shrieked, flew off and got caught some two metres away in the air by the foot of the hawk and I may be forgiven for not having noticed the detailed pattern of underwing coverts and the markings of the spread tail. The hawk took its quarry up to another large branch of the tree, the weaver was still calling and when it was slain at 15.20 h I did not know whether this was done by action of foot or beak, because I was on my way down into the garden. During the next twenty minutes the hawk plucked and ate its prey. It changed its position on the tree several times. Once it dropped the meal but flew after it and still caught it in the air with its foot (the right foot). At one time it fed standing on the lowest branch of the tree and when I moved to stand below, it crouched, dropped its wings, huffed up its neck feathers and generally behaved like Sussi does when she refuses to give me a kiss. Undeterred by all this I came to the conclusion that the hawk stood about 40 - 45cm and that the tarsus is probably 7 cm long. (Of course I did not realise that this scientific approach, to record first and then look it up in the books would land me in no-man's-land between *tachiro* and *melanoleusus*.).The bird meal was finished at 16.00 h. There was still silence in the garden, except that Sussi was practicing her flushing toilet act, when a pair of enamoured Paradise Flycatchers arrived. The hawk had by now consumed the weaver - we found not even feet or beak - and I feared for the Flycatchers who, blinded by love, were oblivious to the peril. The drama climaxed by the Flycatcher's long trailing tail fluttering in front of the hawk, perhaps even touching it and the hawk's sudden departure from the scene.

Having perused all available descriptions and pictures, I dare conclude the hawk to have been:

* A very large female immature Goshawk of the forest variety and that the visit and display of the Great Sparrowhawk was an embarrassing mistake.
* Alternatively, my Hawk was a small, immature Great Sparrowhawk of indeterminate sex and the behaviour of the adult bird remains unexplained.
* The third possibility, that the Sparrowhawk's deport was unrelated to the Goshawk's presence and that the Sparrowhawk call came from another Sparrowhawk higher up or above the tree cannot be excluded.

Perhaps someone can help me, perhaps someone has seen such things often and perhaps others will choose the least improbable explanation. But then I have seen unlikely things before: or is it probable to find a lioness who is trying to kill a Pangolin? Or to come upon a frog, which having been disgorged by a snake shakes itself and jumps off? Or for that matter (to talk of improbable mistakes of another species): to witness an English master when he impales himself on the horn of a dead antelope?

Imre Loefler, Box 47964, Nairobi, Kenya.

IT'S A HAWK EATS HAWK WORLD

Drama in a Nairobi Garden

Early in November 1989 a pair of Little Sparrowhawks *Accipiter minullus* moved into the trees of our garden on Nairobi Hill. They called constantly and displayed to each other. One day I saw one of them catch a Laughing Dove *Streptopelia senegalensis* on the ground . I was surprised, as I thought the dove would weigh more than the hawk.

During November I also noted that Ruppell's Robin Chat *Cossypha semirufa*, normally a prominent and noisy presence in the garden, was very quiet. I only heard it call at twilight, from a neighbour's garden. At the time I blamed this on our rather overenthusiastic pruning just before the rains, and the aggressive territoriality of a pair of Robin Chats *Cossypha caffra*.

Then in late November I heard some screaming in the garden and saw an adult Great Sparrowhawk *Accipiter melanoleucus* with an immature. Many Red-eyed Doves *S. semitorquata* and Dusky Turtle Doves *S. lugens* visit the garden in search of croton seeds, and whenever I hear the doves explode off the ground, I know that the Great Sparrowhawk is hunting.

On 28 November I heard the doves explode, and looked up to see them scatter in all directions as the young Great Sparrowhawk flew in, landing on a branch. The immature then took off again, and a few minutes later reappeared on the branch with its prey. It was just outside my office window, and to my amazement I saw that it was not a dove, but a Little Sparrowhawk.

Do birds of prey often hunt each other? Or was it a young bird who did not know it was not supposed to eat another hawk?

The next day Ruppell's Robin Chat was back in the garden and singing with abandon. I wonder if this casts any light on the robin chat's habit of imitating the calls of large birds of prey?

Fleur Ng'weno, Box 42271, Nairobi.

SPUR-WINGED PLOVER FLUSHING PREY FROM DRY GROUND WITH ITS FEET

The Spur-winged Plover *Vanellus spinosus* mainly forages along the fringes of wetlands, detecting its prey by sight and then dashing forwards to secure it with a swift lunge of the bill. In 1972, however, Mike Clifton observed these plovers feeding from dry ground in the Buffalo Springs Reserve of northern Kenya, using a peculiar method (*EANHS Bulletin* 1972: 190). A bird would stand on one leg, and rapidly move the other foot back and forth some two or three centimetres above the ground surface in order to flush small insects etc., that were then eaten. The bird would then dash forwards a few steps and repeat the procedure.

During July 1989, again in the Buffalo Springs Reserve, I found one of these plovers using this foraging technique on ground that was covered to a depth of about a centimetre in loose, dry, dead, straw-like grass, much of which was lying parallel to the ground surface. In this case, however, the plover ceased to use this foot-trembling technique when its foraging took it onto a bare silt surface, suggesting that it only required this technique to disclose prey items that were hidden in or under the dead grass. Once on the bare ground, it used the 'dash and lunge' tactics typical of plovers, and described above.

The mammoth *Handbook of the birds of Europe, the Middle East and North Africa* (S. Cramp & K.E.L. Simmons 1983. Oxford: OUP) makes no mention of Spur-winged Plovers foraging in this way, while *The Birds of Africa* Vol.2 (E.K. Urban, C.H. Fry & S. Keith 1986 London: Academic Press) can only quote Clifton's seventeen year old account.

Does this mean, therefore, that this behaviour is unique to this small area of northern Kenya, or that it simply goes unreported elsewhere? The fact that these plovers are commonly seen at considerable distances from their usual wetland habitats in this area may have some relevance here.

Adrian Lewis, 36 Lilymead Avenue, Knowle, Bristol BS4 2BX. U.K.

LIFE IN THE TANA RIVER FORESTS

Doing research in a natural environment is very interesting because one comes face to face with nature. In a given day, in the Tana forests, one can enjoy the melody of natural music consisting of a mixture of sounds from the flowing river, blowing wind, swaying tree branches, vocalising hippopotamus, various species of birds, primates and invertebrates. One morning in September I had a very interesting experience. I was watching the rare and endangered Tana river Red Colobus monkeys. From my vantage point I had to contend with biting mosquitoes and tsetse flies. Then a buffalo emerged from where it must have been resting and I climbed the nearest tree. The buffalo did not bother to follow but took off. Then I started wondering how I had climbed a tree with such a big trunk. I did not take long wondering because I found myself climbing down the tree very fast after seeing a snake in an adjacent branch of the tree. My actions must have been involuntary. I decided to ascertain whether the buffalo had actually gone, but then I heard some people talking. Fearing that they might be dangerous poachers, I decided to hide where the cover was very thick until the people had passed, but I did not hide for very long. Unfortunately I had chosen a place full of a shrub species which irritates intolerably once it comes into contact with bare skin. I yelled and emerged from my hideout only to scare some Pokomo people who were collecting firewood (apparently they were the people I had heard talking). They enquired about what had happened to me. While I was narrating the story to them I did not realise that we were standing on a trail of safari ants. These tiny creatures apparently found their way and started stinging everybody in a synchronised manner that sent everybody fleeing for a private place where we could remove the safari ants. From my new hideout, something fell near me and I thought it was the buffalo again only to realise that it was a tree branch that had fallen, missing my head by a couple of metres. I decided to go and rest near an ox-bow lake. This time I was more fortunate because I saw hippopotamus from afar, so I decided to sit on a branch of a Msasusi tree (Pokomo name).

It was not much more than thirty minutes before I heard gun shots from the south. This proved that there must have been some poachers following elephants in the area, so I decided to terminate my work and go and report the shooting to the game rangers. Whilst driving there the car got stuck in the mud so I had no alternative but to go back to my own camp. When I got there I decided to go back to my tent and cook some food. While reading a text book, I got so engrossed with the abstract theories that had it not been for for the smell and the smoke, I would not have known that my food was burning.

The Tana River Primate Reserve is very interesting for dedicated researchers and adventurers.

Ochiago W. Odhiambo, Institute of Primate Research, National Museums of Kenya.

BRONZE SUNBIRD CATCHING FOOD IN A CLASSROOM

There are three doors into the Biology Laboratory of the University of Eastern Africa. In the mornings the laboratory is also used as a lecture room for about 10 - 45 students. To ensure more effective ventilation, the doors are usually left open.

Several times during the lectures in 1988/89 a Bronze Sunbird *Nectarinia kilimensis* has flown into the classroom and started fluttering near the ceiling particularly in the corners. The Sunbird picks up insects and spiders from the cobwebs. The bird is not disturbed by the people in the room but of course diverts their attention from the lecturer. It has learned to remember the way out and it returns at intervals of some days or weeks.

The same male Sunbird is very often seen round the Biology building among the *Aloes* in the flowerbeds. The building may be located just in its territory, and the bird has also learned to exploit the indoor space.

John and Jane Goodman (1987. *EANHS Bulletin* 17: 54.) report the peculiar behavior of a Superb Sunbird *N. superba* flying at the windows outside the house, probably to see its own reflection, but it never ventured into the room.

Eero Antikainen, University of Eastern Africa, Eldoret.

NOTES ON THE BEHAVIOUR OF SIX SPECIES OF BIRDS FROM KENYA

Grey Heron *Ardea cinerea*

In June 1989, on the river bank opposite Samburu Lodge, an adult Grey Heron was seen standing in a peculiar way, with its wings half-opened and twisted, so that their ventral surfaces were tilted up towards the sky. This bird was sunbathing, and it held this striking posture, facing motionless into the bright sunlight, from about 3.30 - 3.45 pm.

Dave Richards published a superb photograph of a Goliath Heron *A. goliath* sunbathing in this way (on the cover of *Swara* magazine, 1982 Vol.5 No.6), and Burton (1985) has a similar illustration of Painted Storks *Ibis leucocephalus* (1985 *Bird Behaviour* p.34).

Saddle-Billed Stork *Ephippiorhynchus senegalensis* and White Stork *Ciconia ciconia*

On 31 August 1989, in a small swamp near Keekorok Lodge in the Masai Mara, a White Stork foraged in the marsh vegetation while a pair of the larger Saddle-billed Stork stood motionless nearby. The White Stork's methodical quartering of the ground gradually brought it nearer to the Saddle-bills until, when the White Stork was about 5 m distant, the male of the pair started to walk towards it. This male opened its wings a few times in presumed threat display as it walked, then charged the final metre or so, driving the White Stork before it, until the latter flew up into nearby trees.

This behaviour presumably results from the basically territorial nature of the Saddle-billed Stork (Brown et al. 1982), directed in this instance against a similar species actively competing for similar resources.

Pygmy Falcon *Polihierax semitorquatus*

A female Pygmy Falcon was watched begging for food held by a male, during late June 1989 in Amboseli National Park. The two birds were perched next to each other on a horizontal branch, and the male stood holding the head of a very small (c. 6-7 cm) dead snake in his bill, while the snake's body hung down loosely across his breast and upper belly. The female faced him at close quarters, and kept up a continuous, loud rythmic twittering. Both birds wagged their tails rapidly up and down throughout this interaction,which lasted for several minutes, after which they flew off out of sight, the male still clasping the snake.

Brown et al. (1982) note that little is known of the heterosexual displays of the race of the Pygmy Falcon found in Kenya and surrounding countries. In southern Africa, however, the male calls the incubating female off the nest in order to feed her, which may explain the Amboseli incident. The male of these southern African birds is also known to greet the female with a silent tail-wagging display.

Lemon Dove *Aplopelia larvata*

The Lemon Dove is normally a very wary and retiring bird of forest ground-storey, in my experience seen most often as a dark dove with a white face, flashing through the forest at Kakamega. But it comes out to some birdbaths and feeders along forest edge in Nairobi, and Urban et al. (1986) mention instances where it has become tame enough to glean crumbs at picnic sites.

Another instance of this kind of tameness comes from The Ark, in scrub forest on the eastern slopes of the Aberdare Mts., where a pair have been frequenting a feeder over the past few months, and allowing observers to approach to within a metre or so.

Rufous Sparrow *Passer motitensis*

At Nairobi in early September, two adult male Rufous Sparrows displayed to a female. They approached the female very closely and kept up a continuous high chirruping, while puffing up the rufous feathers of their rumps and lower backs like those of displaying Puffbacks *Dryoscopus* spp. or Yellow Bishop *Euplectes capensis*. Their tails were cocked up at an angle of c. 45° to their bodies, and they raised their heads so that their bills pointed nearly vertically upwards, in which position their black throats and chins became very conspicuous {cf. a display of the Black-faced Sandgrouse *Pterocles decoratus*, which also has a similarly contrasting chin and throat patch (Lewis. in press)}.

Posturing of this type is found in the courtship displays of most, if not all, members of the genus Passer, and this instance of two males displaying to a single female probably resulted from the chasing of a female by a displaying male causing sufficient disturbance to attract a second sexually active male (Summers-Smith 1988).

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Adrian Lewis, 36 Lilymead Avenue, Knowle, Bristol BS4 2BX, U.K.

BLACK CRAKE ROBBING WEAVER' NEST

On the morning of 10 January 1990, on one of the EANHS Wednesday Bird Walks, we were watching a patch of papyrus in the dam at Closeburn Estate. We were surprised to observe a Black Crake *Limnocorax flavirostra* fly up to a papyrus stalk where there was a Speke's Weaver's nest. Despite the angry efforts of the weavers to dislodge it, the crake delved deep into the nest and spent some minutes devouring whatever it found there; we could not tell whether it was eggs or nestlings. *The Birds of Africa* Vol.11 p.115 mentions the varied diet of the Black Crake and that it takes heron eggs.

Pat Wooton, Box 46143, Nairobi.

LETTERS TO THE EDITOR

Dear Sir,

BLACK-LORED CISTICOLA IN NANDI HILLS

On 17 September 1989 on our way back from Kakamega Forest through Nandi Hills down to Naivasha, we stopped on the road down Nandi Hills beyond Kapsabet to check one of the Cisticola Warblers, and surprisingly this one had very conspicuous black lores continuing down from the eye - definitely Black-lored Cisticola! The male and female were heard duetting, first piping notes (flute-like), which were answered from a few metres to the right by the female with bell-like trilling, this continued for some time when suddenly another male answered from a few metres away. The bird that was watched did not seem to hide very much, but coming up and down the perch from time to time. We were there for about 15 minutes and also noted that the bird was completely unstreaked, the underparts were pale buffish with more dusky sides and breast, upperparts darker than underparts (earth brown), cap chestnut brown, estimated size 13-14 cm shape long, broad and rounded. The habitat was was thick bush mixed with grassland, on the fringes of hill forest.

The distance between the observer and the observed bird was less than 10 m and the weather was cool and clear with scattered cloud.

The binoculars used were Leitz Trinovid 10 x 40 and the observers have 21 and 39 experience of birdwatching.

The black-lored cisticola was not so noisy as the Chubb's cisticolas we heard in Kakamega Forest and, referring to Praed & Grant, the lores of Chubb's are DUSKY not BLACK.

Please let us have comments on this observation since this bird is not supposed to be in Kenya but southern Tanzania.

Lars Bak, 425-B Kongevejen, DK-3490 Kvistgaard, Denmark. & Jamie Macleod, Box 42736, Nairobi.

In Scopus vol.2 (1978) p.100, John Harpum describes the "conspicuous duet" of the Black-lored Cisticola as sounding "like a rusty iron gate swung back and forth on its hinges", not the flute-like piping and bell-like trilling described above.

However, perhaps more knowledgeable members would care to comment on Mr Bak's and Mr MacLeod's observations? Ed.

Dear Sir,

I was interested to see the note in a recent Bulletin (Vol.19: 34) concerning the breeding of Marabous at Shinyanga. In fact that colony has been known for some time, and was reported by Slim Easton (*EANHS Bulletin* 1975: 110-111) and in 1976: 3. It is useful to know that it is still there. The colony is reported to have existed since at least 1972. There were 33 nests in 1975, but less in 1976, apparently due to interference by people.

Other colonies known from Tanzania include the Kikuletwa River (last reported in 1941), Lake Manyara (1960), Ikoma (1973), Kalambo Falls (1942), as well as undated reports from Kondoa-Irangi, Kafisia, Muze-Muse River, Great Ruaha River, Mto-wa-Mbu, Kiteti and Mhandu Hills.

Recent records from these and other colonies would be of interest. Marabous are increasing in many urban areas of Uganda, with about 300 pairs now breeding in Kampala alone; is the same thing happening in other parts of East Africa? Apparently not in Shinyanga, if there were only 16 nests in 1988.

Derek Pomeroy, Department of Zoology, Makerere University, Box 7062, Kampala, Uganda.

Dear Sir,

CURLEWS AND ROLLERS : notes on behaviour

The long slender bill of a Curlew never seemed to me to have been designed for particular strength.

However, early one morning at Watamu I watched a Curlew attacking a fairly large Ghost Crab with all the tenacity of a terrier, pulling off the legs and claws one by one and eating them with evident relish. He then cracked the shell of the unfortunate crab with his bill, and proceeded to eat the entire carcass. His final mouthful was so large that he had to open his bill to its fullest extent. The lump was clearly visible as he forced it down his gorge.

The curlew was subsequently exceedingly reluctant to fly, and trotted in silent agitation for about 70 metres up the beach rather than risk his usual raucous, split second take-off. I did not press the experiment, as I had no wish to spoil his breakfast.

A few minutes later I had the unusual experience of being very determinedly mobbed by a lone Lilac-breasted Roller. The attack lasted no more than 30 seconds, and ended as abruptly as it began. I have no idea what provoked this, because I was entirely alone on the beach, walking close to the tide line where I was no conceivable threat to a nest. After making me duck several times, the roller flew back to his companions on a Casuarina well back from the beach, clearly - and rightly - satisfied that he had scared me away.

Looking at the books later, I think that he may have belonged to the Somali race of this species, as the chest patch of lilac appeared smaller than usual. Is there any evidence to suggest that the Somali race of Roller is more aggressive than the Kenya race? Politicians are not invited to reply.....

T.C. Noad, Box 40034, Nairobi.

Dear Sir,

Members may be interested in the following record. We observed for the first time on Thursday 22 February, in our garden at Ridgeways off the Kiambu road, a young Klaus' Cuckoo in immature plumage and able to fly with ease. It occupied one of the many trees around the house vociferously demanding food. This was provided by the foster parents, a pair of Variable Sunbirds. We estimate that the cuckoo had left the nest some two weeks previously and that the parents were obviously feeling the effect of feeding a fledgling now several times their size.

Michael Blundell, Box 30181, Nairobi.

Dear Sir,

In the December issue of the Bulletin I read the letter from Mr Dekker in Karen about the number of different species of cuckoos in his garden and their almost simultaneous calling.

Far be it from me to disagree with the indefatigable Adrian Lewis, but surely an alternative explanation to this phenomenon is simply that the calls of all these cuckoos are being mimiced by the same Robin Chat!

The White browed Robin Chat *Cossypha heuglini*, Ruppell's Robin Chat *C. semirufa* and the Robin Chat *C. caffra* are all notorious mimics of cuckoo calls and any one of them might occur in Mr Dekker's garden.

Rupert Watson, Box 24251, Nairobi.

Dear Sir,

REFERENCE BIRDS IN MY GARDEN

We have been in touch with Mrs Fleur Ng'weno who tells us that the Society is interested in how the local birds rear and feed their young. My house is situated at the corner of Ndemi and Mwenga roads, off the Ngong Road and I have a bird table where we put bread, millet, fruit and water, this is just outside my bedroom window. Bulbuls, Weavers, Sparrows, Olive Thrushes, Mouse Birds and Fire Finches are regular visitors throughout the day.

When the nestlings are first hatched, the weavers collect small pieces of bread and fruit and fly off with them. After a few days they bring their nestlings with them. Two babies sitting close together and the parents feeding them alternately. One morning last week (mid-January) the young weavers were alone on the table and a Bulbul fed them until the mother came.

I found this most interesting. Now these young weavers come with their parents but feed themselves and drink from a small shallow dish.

The Bulbuls are also feeding their young on the table as do the Olive Thrushes, the thrushes drink and bathe a lot.

The Fire Finches mainly feed on the ground picking up the bread and other food thrown down by the weavers. The Mouse Birds crowd on to a large piece of pawpaw and feed their babies in an Hibiscus bush behind the table, until they can feed themselves. The Sunbirds peck off these flowers and also from my African Violets on the verandah - they do not visit the table.

We have many different Pigeons and Doves including many feral pigeons who come from a large dove cote just across the Ndemi Road.

We have a Kite family which nests in the big Cape Chestnut tree that shades the house. They come to drink and bathe in another water bowl some 30 metres away.

We also have a family of Hadada who are regular visitors, they occasionally drink and bathe in the bath at about 5 p.m. and the Kites dive bomb them.

We used to have Hoopoes but I have not seen them for about two years, but often hear them call at dawn.

Help please: I wonder if you can give me the name of a very tiny all black bird with a pale bill. It comes occasionally with the Fire Finches and feeds with them below the table for about half an hour. There is only one and he does not go on the table.

Ruby Kinnell, c/o Box 20104, Nairobi.

The tiny black bird to which you refer is an Indigo Bird, there are several species which parasitize various species of Fire Finches and are now distinguished by reference to their host. The Indigo bird commonly found in Nairobi gardens is called the Red-billed Firefinch Indigo Bird *Hypochera chalybeata*. His only occasional appearance is explained by the fact that he is quite unremarkable in non-breeding plumage and liable to be overlooked. Ed.

Dear Sir,

On 30 January 1990, my wife and I were travelling with friends about 2 km west of Keekorok, in the Masai Mara, towards the Sand River gate. Having spotted a lioness within 20 m of the road I drew up on the raised hard shoulder of the road to watch her drinking in a shallow pool, with shoulders hunched and forepaws in the water.

Suddenly between swallows of water, she looked to her left, tensed and pounced. She then picked up a 15 cm long tortoise in her mouth, but finding the hard shell and the frantically wriggling legs and head unmanageable, she dropped it back into the water and put her front paw on it.

For a few minutes she remained, apparently embarrassed, before picking the tortoise up again, adjusting its position by throwing her head up and then crunching through the shell.

The lioness then laid back her ears, like a domestic cat expecting her prey to be removed, and stayed that way for over eight minutes before walking past the car to a small mound where she lay down beneath a bush.

On our return to the pool about an hour later, only a small glimpse of the lioness could be seen - nothing of the tortoise!

Are lions, apparently healthy and well fed, known to eat tortoises - or was this dessert?

Peter Chitty, Box 14630, Nairobi.

MORE NEWS OF LIMURU SWAMP

In March 1989, Geoffrey and Dorothy Irvine sent a list of waterbird species seen on the Limuru Swamp (EANHS Bulletin Vol.19: 10-11). They had spent no more than 20 minutes observing the swamp in June of the previous year and recorded 15 species of waterbird. As I was staying in the area, I visited the swamp at 10.00 h on 7 January 1990. I spent just over two hours there and walked almost around it - a grazing bull saw to it that I did not walk around the whole swamp. Nevertheless, I was able to see all parts of the swamp during my walk. Over the two hours, I counted and identified all the waterbirds (see Table). I tried to avoid disturbing the birds during the count. Some birds took flight but I was confident that these did not affect the counts.

Twenty one waterbird species made up a total waterbird count of 974 birds for the swamp. Possibly, there were other cryptic species which I missed. There were also about ten migratory shorebirds (Charadriformes) which I was not able to identify. A few days before this count, I noticed a Hamerkop *Scopus umbretta* and a Pink-backed Pelican *Pelecanus rufescens*. Ten duck species were seen including three migratory species. There appeared to be a pair of Yellow-billed Duck nesting and two broods of African Coot chicks were seen.

As noted by G & D Irvine, Limuru Swamp has had little water in it for years. I used to pass by the swamp frequently in my childhood and cannot remember it with as much water as it has now. My 'reliable' memory for this period was only 1964-1971, after which I left for Australia. It seems the swamp has been relatively dry since then until 1988. However, Mr H.S. Morton, a long time resident, remembers shooting duck in a similarly large swamp there in the late 1940s. Boats were apparently used on the swamp during the 1920s. The swamp was also large enough to support a population of Hippopotamus; hence its local name of Kiboko (Kiswahili for Hippo) Swamp.

I hope the swamp retains a reasonable amount of water and so continues to be an excellent site not only for watching waterbirds but also for waterbird conservation. Such small wetlands can be very important for migrants as staging habitats on the journey south

R.T. Kingsford,
New South Wales National Parks and Wildlife Service,
Box 1967, Hurstville, N.S.W. 2220,Australia.

TABLE: Counts of waterbird species on Limuru Swamp on the morning of 7.1.90

Species	Specific name	Count
Little Grebe	*Tachybaptus ruficollis*	35
Long-tailed cormorant	*Phalacrocorax africanus*	2
Black-headed Heron	*Ardea melanocephala*	2
Cattle Egret	*Bubulcus ibis*	9
Squacco Heron	*Ardeola ralloides*	2
Sacred Ibis	*Threskiornis aethiopica*	4
Whitefaced Tree Duck	*Dendrocygna viduata*	12
White-backed Duck	*Thalassornis leuconotus*	16
Yellow-billed Duck	*Anas undulata*	16
Pintail	*A. acuta*	14
Red-billed Teal	*A. erythrorhynchos*	7
Hottentot Teal	*A. hottentota*	4
Garganey	*A. querquedula*	45
Shoveler	*A. clypeata*	24
Southern Pochard	*Netta erythrophthalma*	41
Maccoa Duck	*Oxyura maccoa*	39
Common Moorhen	*Gallinula chloropus*	9
Red-knobbed Coot	*Fulica cristata*	678
Blacksmith Plover	*Vanellus armatus*	3
Black-winged Stilt	*Himantopus himantopus*	9
Wood Sandpiper	*Tringa glareola*	2
Common Sandpiper	*Actitis hypoleucos*	1

THE ICBP/IWRB SPECIALIST GROUP ON STORKS, IBISES & SPOONBILLS INVITES YOUR PARTICIPATION

The International Council for Bird Preservation (ICBP) and the International Waterfowl and Wetlands Research Bureau (IWRB) are two international organisations dedicated to the conservation of birds. ICBP and IWRB have been very active in Africa. The Specialist Group on Storks, Ibises and Spoonbills (SIS) is a group of ICBP and IWRB dealing primarily with these species. Many storks, ibises and spoonbills are large, wetland birds; others inhabit drier habitats. Most of you are familiar with the common Marabou Stork, but may be less familiar with some of the rarer species such as the Shoebill or the endangered Dwarf Olive Ibis found only on Sao Tome.

In Africa, as in most areas, we simply do not have much basic information on the status and distribution of these birds. We all need to work together to gather this information and to evaluate it on local, regional and continental levels. This information will also become an important part of additional work, such as determining the habitat and food needs of these birds.

Most storks, Ibises and spoonbills are wetland species. On one level, we are attempting to gather information on the health of populations of these species. On a larger scale, the health of these populations will depend on the health of wetlands, and indeed, the status of these species are important indicators of the health of wetlands.

Storks, ibises and spoonbills are tied to the same wetland habitats as other species such as herons, egrets, cranes etc. We will make a greater contribution and achieve a better understanding of the wetlands by co-ordinating our observations on storks, ibises and spoonbills with the efforts of other researchers working on these other species; and in many cases we will be able to gather needed information on these other species with little additional work.

It will take a large group effort with contributions from many people in order to gather the information necessary to evaluate the status and distribution of storks, ibises and spoonbills. I encourage you to join our efforts. We are building a network of interested people, increasing communication among participating members, and aiding conservation efforts. If you are interested in participating, please write to Malcolm C. Coulter, Savannah River Ecology Laboratory, Drawer E, Aiken, South Carolina 29802, U.S.A. or write to Koen Brouwer, National Foundation for Research in Zoological Gardens, P.O. Box 20164, 1000 HD Amsterdam, The Netherlands. We look forward to hearing from you

Malcolm C. Coulter & Koen Brouwer.

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This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the Joint Society-National Museum Library (postal borrowing is possible); a copy of the EANHS BULLETIN every four months and a copy of each Journal published during your period of membership. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

JOURNAL:
The Society publishes the Journal of the East Africa Natural History Society and National Museum. Each issue consists of one paper; sometimes two or more short papers may be combined to form one number. Several may be published during one year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

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This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS BULLETIN), P.O. Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs can be published.

SCOPUS:
The Ornithological Sub-Committee publishes this bird journal five times a year, cost Kshs. 100 per annum. All correspondence to D.A. Turner, P.O. Box 48019, Nairobi, Kenya.

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Journal, East Africa Natural History Society and National Museum,

The following corrections to previously published parts of the **Journal** of the **East Africa Natural History Society** and **National Museum** should be noted, and the necessary amendments made:

1. "Report on activity in the Northern Crater of Ol Doinyo Lengai, 24th June to 1st July 1988", by Celia Nyamweru should have been Volume No. **75** and not Volume No. **79.**

2. "Fig Trees *(Ficus,* Moraceae) of Kenya" by H.J. Beentje should have been Volume No. **78** and not Volume No. **76.**

3. A revised set of "Instructions for Authors" is available on request from The Hon. Secretary, East Africa Natural History Society, P.O. Box 44486, Nairobi, Kenya.

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NOTES ON LULANDA FOREST, SOUTHERN UZUNGWA MOUNTAINS, TANZANIA

Lulanda Forest is small, no more than a few hectares in extent, but contains a remarkable diverse flora and has recently yielded a number of new plant species and a new genus. The forest is located in the southern Uzungwa mountains in two valleys on the edge of the east facing escarpment at around 1,450 metres altitude at 8 36 S., 35 37 E. There are two patches, both of which have been exploited for timber (we saw *Vitex amaniensis* being cut), the supplies of which have recently been exhausted. Elsewhere in the southern Uzungwa most plateau forests are secondary, and Lulanda forest may owe its existence to the dominance of the tree *Parinari excelsa* which is difficult to cut. Currently there is encroachment for cultivation at the forest edges, probably due to transport problems making it difficult to obtain fertilizer and so forcing local people to plant in the fertile forest soils.

New or interesting trees and shrubs include: *Berteria pauloi*, *Canthium* sp. nov., *Coffea* sp. nov. *Cola* sp. nov., *Drypetes gerrardinoides*, *D. usamabarica* var. *rugulosa*, *Lasianthus peduncularis*, *Lasiodiscus* sp. aff. *mildbraedii*, *Psychotria megalopus* , *Trichilia lovetii* and *Zimmermaniopsis uzungwae*.

Larger trees include: *Alangium chinense*, *Albizia gummifera*, *Allanblackia stuhlmannii*, *Anthocleista grandiflora*, *Apholia theiformis*, *Bersama abyssinica*, *Bridelia brideliifolia*, *Caloncoba welwitschii*, *Canthium oligiocarpum*, *Cassipourea gummiflua*, *Chrysophyllum gorungosanum*, *Cola greenwayi*, *Cryptocarya liebertiana*, *Cylicomorpha parviflora*, *Drypetes gerrardii*, *D. usambarica*, *Garcinia volkensii*, *Hallea rubrostipulata*, *Isolona hexaloba*, *Ixora scheffleri*, *Maytenus acuminata*, *Myrianthus holstii*, *Myrica salicifolia* (on the edges), *Pancovia golungensis*, *Parinari excelsa*, *Polyceratocarpus scheffleri*, *Polycias fulva*, *Rauvolfia caffra*, *Rawsonia reticulata*, *Schefflera goetziana* (a liane which rarely occurs as a tree, the Lulanda tree has just fallen over), *Schrebera alata*, *Strombosia scheffleri*, *Trichocladus ellipticus*, *Trilepisium madagascariense*, *Vitex amaniensis* and *Xymalos monospora*.

For such a small forest Lulanda contains a remarkable number of interesting species, and with nearly forty large tree species recorded it has a high diversity. This suggests that at one time it was directly connected to the larger forests of the Uzungwa escarpment from which it is now separated by some kilometres of grassland. Another interesting feature is the mixture of drier and wetter forest and lower and higher altitude trees. This adds to the diversity and may be explained by the marked dry season of the southern Uzungwa combined with permanent streams and waterlogged areas; together with the mass heating effect of being on a large mountain and a cold season that is not buffered by being in a large forest.

We are grateful to the Tanzania Commission for Science and Technology for permission to conduct research in Tanzania; J.L. was funded by the National Geographic Society, World Wildlife Fund and Caltex Corporation during the course of fieldwork.

Jon Lovett, Department of Botany, University of Dar es Salaam, P.O. Box 35060, Dar es Salaam, Tanzania. Colin Congdon, Brooke Bond Tanzania Ltd., P.O. Box 40, Mufindi, Tanzania

DELOSPERMA IN EAST AFRICA

The genus *Delosperma* N.E. Brown is a member of the family Aizoaceae, which has its centre of divergence in southern Africa. All the species have succulent leaves and occur in arid regions. Most species occur in southern Africa, but three species are reported from the area of the *Flora of Tropical East Africa* (Jeffrey, 1961), namely *D. abyssinicum* (Regel) Schwantes, *D. nakurense*

(Engler) Herre, and *D. oehleri* (Engler) Herre. In Jeffrey's key (1961) the species are distinguished by surface characters (papillae) of the young stems, pedicels, and calyces, by the diameter of the main branches, and by flower sizes.

The genus also extends beyond the F.T.E.A. area into Ethiopia and Arabia, from where four species are reported. These include *D. abyssinicum* and *Delosperma nakurense*; the other two are *D. harazianum* (Deflers) Poppend. & Ihlenf. and *Trichodiadema schimperi* (Engler) Herre, to be transferred to *Delosperma* (Hartmann & Niesler, in press). This Ethiopian/Arabian complex is very poorly represented in herbaria, and much more field work is required before a satisfactory taxonomic conclusion can be drawn. Sufficient material of the Kenyan/Tanzanian complex is available to permit a preliminary assessment.

The name *Delosperma abyssinicum* (Fig. 1) has been applied to plants from high altitudes in northern Kenya (Jeffrey, 1961), apparently in different rock types (Mt. Furrole on basement rocks, and Mt. Kulal on volcanic rocks). Similar plants collected recently on Mt. Baio (Newton 3198, Hartmann & Newton 28524, on basement rock) may also belong here, but unfortunately fresh material for comparison has not yet been found on Mts. Furrole and Kulal. *D. abyssinicum* is distinguished from *D. nakurense* mainly by the possession of weaker main branches and smaller calyx tubes. Our data so far show an overlap in variation of stem diameter and flower size in *D. nakurense* with the values given by Jeffrey (1961) for *D. abyssinicum*. We are therefore uncertain whether we are dealing with two species, or only one.

Delosperma nakurense is the most widespread of the three described species (Fig. 1). From the known distribution it seems that *D. nakurense* prefers volcanic areas, mostly at lower altitudes than localities of plants referred to as *D. abyssinicum*. We have examined 17 populations in the field and have found a considerable variation in growth form and leaf surfaces. Growth forms range from erect to straggling, often entangled in other shrubs, and sometimes even pendulous. Surface features, i.e. shape and size of papillae, characters used by Jeffrey in his key to separate *D. nakurense* and *D. abyssinicum* from *D. oehleri*, indicate clinal variation with an increase in papilla length towards the south (where the distribution of *D. nakurense* and *D. oehleri* overlap.

Delosperma oehleri is known from three localities only, the type locality being in the Ndassekera mountains. There is some confusion concerning the exact location of these mountains, as information regarding their present name varies. Engler (1909) and Jeffrey (1961) both indicate that the type locality is in Tanzania (Deutsch-Ostafrika, Tanganyika, respectively, but other sources suggest that the Ndassekera Mountains are in Kenya. The two other known localities lie not far away in south-west Kenya (Fig, 1) on decomposed crystalline basement rocks. Material studied so far shows that the creeping growth form with thickened adventitious roots, and the smaller nectary glands in the (magenta) flowers, distinguish *D. oehleri* clearly from the other two species. Neither of these characters was included in the original description (Engler, 1909) or mentioned by Jeffrey (1961). Another distinctive feature is the development of a tuberous primary root (Newton, 1988).

From the above it is clear that *Delosperma* in Kenya and Tanzania falls into two distinct groups. On the one hand we have *D. oehleri* as a species; on the other hand *D. abyssinicum* and *D. nakurense* appear close and their delineation is uncertain. In order to clarify the taxonomic status of these plants, further studies will be made and more fresh material is needed. In particular more records and material are needed for *D. abyssinicum* and *D. oehleri*. Members who see any of these plants in the field are requested to inform us. If it is possible to send living material with data on locality, etc. (one representative plant) to Nairobi, this would be greatly appreciated.

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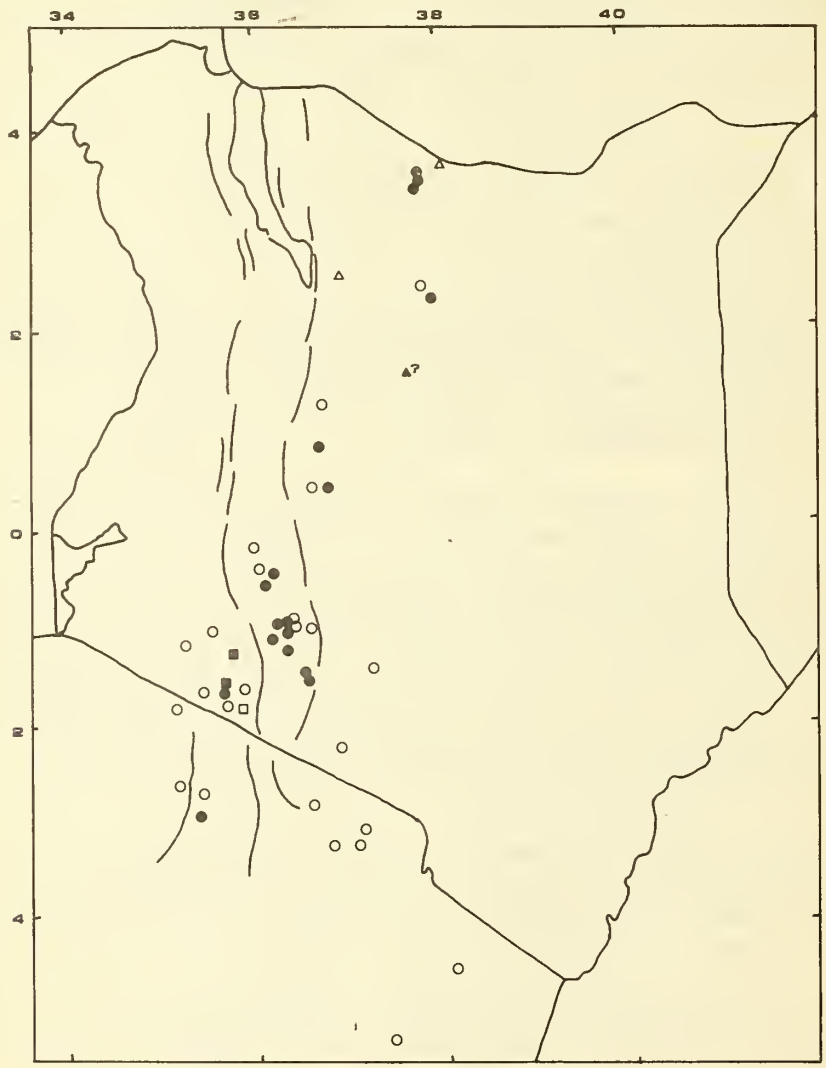

Fig. 1. Distribution of the genus *Delosperma* in Kenya and Tanzania.
(= *D. abyssinicum*, = *D. nakurense*, = *D. oehleri*; open symbols = herbarium records seen, solid symbols = populations studied by the authors.)

THE GOLDEN BOUGH, GRIEF OF THE WHISTLING THORN

Now in January, the landscape here in this part of Laikipia is drab grey and brown, the colourless tones of the dry season. The grass has been reduced to clumps of stiff stalks, bristling out of bare earth between bald stones. Most shrubs and trees are mere skeletons of twisted branches enmeshing one another in their own tangles of thorns. What leaves survive are leathery, suffocated in dust. It is a dull time of year. But here and there I can see streaks of vivid colour.

The big whistling thorn in front of the cottage gleams with a golden glow. Close by is a fever tree whose lower branches are ridged with combs of bright orange-russet. There are peppermint stripes on some of the evergreen shrubs. In a dry watercourse there are splashes of scarlet and yellow on a succulent creeper. However, it is not the trees and shrubs that are flowering but their hangers-on, all various species of Loranthaceae, the 'strap-leaved' parasitic shrubs that are closely related to the Viscaceae, the 'sticky' mistletoes. There are nearly a hundred species of Loranthuus in East Africa of which I have found seven just around here, and one Viscum is overwhelmingly common.

Miriti, s/o Rintary, has been doing odd jobs around the cottage. This Meru lad was looking after the garden so carefully that it was clear that he had a sympathy for plants. I asked him about the parasites. First he told me their names. Though the (new) scientific name *Plicosepalus curviflorus* is perfectly descriptive of the golden 'folded-sepal curved-flower' with the red stamens, the local names are equally apt. The plant is called *kieba kia muruai*, the 'grief of the whistling thorn'. The rigid orange-russet *Phragamanthera dschallensis*, that really does grow like a 'hedge-flower' on its branches which are attached to those of the fever tree is the grief of that species of *Acacia* - - *kieba kia murera*. The *Viscum tuberculatum*, the true 'sticky' mistletoe, is a *kieba* of its favourite host, the *mukinyii* tree.

Beliefs concerning the potency of the mistletoe are deeply rooted in ancient European lore. The plant was especially connected with fertility rites. When the midwinter festival of solar rebirth was translated into the celebration of the birth of Christ, the mistletoe was carried from sylvan alters into churches. The Catholic Church flourished because it incorporated old traditions into Christianity, but such blatant survivals of paganism, particularly those with sexual connotations, horrified the Puritans - - to the extent that in 1652 Oliver Cromwell abolished the celebration of Christmas. But old customs die hard and not only was Christmas reinstated as a holy day but even today clusters of mistletoe are still hung in homes at Yuletide

I wondered if here there was any mystical belief concerning the strange plants which hang twixt heaven and earth. There is, but it is only a recent transplant. Miriti described how the village church had been colourfully decorated with branches of *kieba* for Christmas - - a nice little African footnote to the ten volumes James Frazer wrote tracing the ramifications of **The Golden Bough** from the sacred groves where kings were once killed. I told Miriti I would like to know more.

Miriti went off to ask the old people about the *kiebas*. He came back with no magical stories to tell but with some practical recipes written in his notebook. Certain *kiebas* growing on certain plants (most of the *kiebas* have more than one host) can cure ailments of man and beast. A decoction made by boiling, for a couple of hours, the leaves of *P.curviflorus* or *P.dschallensis* growing on their common *Acacia* hosts will cure liver pains so effectively that only a teaspoon of the potent potion is needed. The leaves of the peppermint-striped *Tapinanthus zizyphifolius*, when boiled for a day and steeped for a second day, provides a liquid that relieves stomach congestion in cattle, sheep and goats. The *Viscum*, when it grows on its favoured *mukinyii* tree can be stewed and used for the same purpose - - but when it grows on *muringa* it has precisely

the opposite effect on human insides. Miriti told me that one elderly man had recently trudged down from the hills to collect a sackful of medicinal *kiebas* which he was delighted to find growing here in such abundance.

The host plants may not be so happy. Although their uninvited guests, who never leave, are not totally dependent on their hosts (the Visaceae and Loranthaceae have their own green leaves and so do their own photosynthesizing, hence they are classified as hemi-parasites), some of the trees are so bowed down with *kiebas* that it is all too obvious why they are called the 'grief' of their hosts. The whistling thorn in front of the cottage has three different species growing upon it, all in profusion. Another, nearby, has four. The ones by the stream are so laden with *Viscum* that all one sees of the trees are the lower parts of their trunks.

Some birds build their nests in the dense clusters of *Viscum*, and many eat the sticky berries whose seeds they then excrete while perched on other trees. The English name 'mistletoe' comes, through Old German, from the proto-Indo-European root word meaning 'to excrete' (cf. 'micturate'), for even in prehistoric times people realised that the plant was propagated by the droppings of birds, the Mistle Thrush.

Birds help, inadvertently of course, the plants flourish in other ways, too. Certain species of birds have evolved long curved bills to fit inside the long curved flowers of the Loranthaceae (or perhaps the flowers have evolved to suit the birds?). These birds dip their bills in to fish out whatever miniscule insects may have drowned in the nectar at the bottom of the narrow tubes. As the birds flit from blossom to blossom they pollinate them. Thus the aerial shrubs are able to flower fruitfully even during the dry season when few insects are flying flying about. I have seen four species of sunbirds flying amongst golden boughs hanging from the tree in front of the cottage. The grief of the whistling thorn is their delight and mine.

Cynthia Salvidori, Box 477, Nanyuki, Kenya.

NEW RACE OF GUINEA FOWL?

While staying with close friends, Nina and Basil Mitton, at their house at Ukunda, south of Mombasa in October 1989, they drew my attention to a small flock of guinea-fowl which, though shy, had learned to approach the house for food.

They were identical with the Kenya Crested Guinea fowl *Guttera pucherani* except that in all the birds, there were NO red patches of bare skin on the neck which was entirely a pale blue colour. The red skin was confined to patches around the eyes.

These seem closest to *Guttera pucherani barbata* which, however, does NOT have red patches around the eye.

From my references, it would seem that this may be an intermediate form, possibly an undescribed race.

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D.K. Bednall, 70 Herringston Road, Dorchester, Dorset DT1 2BT.

SILVERBIRD NEAR MT.ELGON

On 16 October 1989 I was staying at the Mills' farm, Lokitela, some four kilometres south of Endebess at an altitude of about 2,300m.

Whilst walking around the farm in the company of my son John (an excellent observer), my daughter Bridget and Dickson, a well known bird man of Elgon/Masai who was trained by both John Williams and the late Tim Barnley, we saw very clearly and from only a few metres away, a Silverbird *Empidornis semipartitus* hopping along a post and wire fence about half a kilometre from the farmhouse; the surroundings were lush green grass and luxuriant bush-growth (it had rained a lot) and was quite near the remnant forest area on Lokitela.

The bird was pale silver-grey above and below was entirely a warm tawny-rufous. The Silverbird is well known to Dickson and myself and, as if to emphasise its unusual surroundings, we saw several of the species the following day in the semi-arid bush below the Kongolai escarpment - its more normal environment.

I have spoken to John Williams about this sighting and he suggests the bird may have strayed in a search for termites.

Although most authors restrict this species to acacia bush at lower altitudes, it is interesting to note that Jackson (p.912) quotes Mount Elgon as a recorded locality.

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D.K. Bednall, 70 Herrington Road, Dorchester, Dorset DT1 2BT.

GREAT SPARROWHAWK CHASING CATTLE EGRET

At about 18.25h on 25 February 1990 on Bogani Road, Karen I saw what was (by its size) a female Great Sparrowhawk *Accipiter melanoleucus* apparently trying to catch a Cattle Egret *Ardeola ibis*. The Egret was flying above the Sparrowhawk, and both birds were spiralling upwards in wide circles. The Egret was able to out-climb the Sparrowhawk (only just!) and after about two minutes the latter abandoned the chase.

If the Sparrowhawk had caught the Egret, the outcome would have been very interesting since the egret must be considerably larger and heavier than the normal prey, such as doves.

C.F. Dewhurst, Box 30023, Nairobi.

SMALL MAMMAL SIGHTINGS

1. Spotted-necked Otter *Lutra maculicollis*; a pair observed in the water immediately adjacent to observation tower No.4 of Saiwa Swamp at about 10.00h on both 5 and 6 February 1990. Identification confirmed when one caught a fish and obligingly lifted its neck several times while swallowing its prey to clearly demonstrate the characteristic brown spots.

2. Bushy-tailed Mongoose *Bdeogale crassicauda*: a single individual attracted to table scraps left under a lantern nightly on 30, 31 December 1988 and again on 31 December 1989, 1, 2 and 3 January 1990 in an Aberdare Salient campsite.

   The scraps also attracted the anticipated genets but the mongoose was a surprise and while

the texts available to me indicate its diet consists of termites, lizards and rodents it may be of scientific interest to note that it also appreciates fried chicken and barbecued spare-ribs.

3. Duikers still survive in the Kakamega Forest Reserve. One streaked by (species unidentified but predominantly greyish) as we stalked the Yellow-billed Barbet on 5 March 1990. We had not camped at Kakamega since '82, but there has evidently been a population explosion of the Black-cheeked White-nosed Monkeys *Cercopithecus ascanius* since large numbers - many with infants - were observed 2 - 8 March 1990.

4. Klipspringer *Oreotragus oreotragus*: a pair were surprised and froze (momentarily) at a range of about 20 metres while two of us were clambering up an unused trail of the crater at Mt. Suswa on 25 February 1990. This pair later spent about an hour on a rocky prominence of the rim observing the activities of the Geological Club encampment below.

Bill Shadel, Box 30137, Nairobi.

DOES THE PALM SWIFT NEST ON ARTIFICIAL STRUCTURES IN EAST AFRICA

It has long been known that Palm Swifts *Cypsiurus parvus* will nest and roost in palms irrespective of whether they are indigenous or exotic species, and of whether they are growing naturally in an area or have been planted there for ornamental purposes.

But when writing the *Kenya Bird Atlas*, I took the view that, given these catholic tastes, these swifts always nest and roost in palms of some sort, so that their distribution is inextricably tied to the palms; and there is nothing to contradict this view in such texts as *Birds of East Africa, Birds of South Sudan, Birds of Somalia, Birds of the Kampala Area*, etc.

However, browsing through *Birds of Africa* recently, I find this view to be quite wrong, there being reports to the contrary from almost all other regions of Africa! The most detailed of these come from Zimbabwe where, by 1960, the species was nesting commonly on box- and H-girders under high bridges, a practice which has already led to a great extension of range. There are even records of birds choosing these sites in preference to nearby palms. Furthermore, there are other albeit occasional records of nesting on bridges, towers and houses from Liberia, Ivory Coast, the Central African Republic, Zaire, Zambia and South Africa.

It would be interesting to know if this practice goes unreported in East Africa or if, for some reason, the Palm Swifts here are 'lagging behind' those in other regions in their colonisation of these widely available nest sites

Adrian D. Lewis, 36 Lilymead Ave., Knowle, Bristol BS4 2BX.

The *Bulletin* will be pleased to publish all replies, should any readers have records of this nesting behaviour among Palm Swifts.

SUNBIRD FLYING BACKWARDS?

On 23 May 1990, our group of birdwatchers were ending another rewarding Wednesday morning Birdwalk, at the end of Loresho Hill near the University of Nairobi farm. We were watching a female Green-headed Sunbird *Nectarinia verticalis* catching small insects low over the ground near a tangle of vines. Suddenly the Sunbird moved backwards for half a metre or so, its wings beating rapidly, without moving higher or lower.

Have other observers seen sunbirds flying backwards occasionally? I had always read that only hummingbirds have the ability to fly in place or backwards.

Fleur Ng'weno, Box 42271, Nairobi.

CORRECTION

In the last issue of the *EANHS Bulletin* Vol.20 (1) pp.13-14 in "Notes on the behaviour of six species of birds from Kenya", notes on only five species actually appeared. The Editor apologises most sincerely to the author, Adrian Lewis, and to our readership for this omission.

The missing note on the Drongo, which should have appeared between those on the Lemon Dove and Rufous Sparrow, is as follows:

Drongo *Dicrurus adsimilis*

While leafing through an account of the birds of the eastern Caprivi strip of southern Africa (Koen 1988), I came upon the fact that Drongos in that area hawk insects around streetlights at night. Recently at Samburu Lodge, a Drongo was behaving in the same way around a powerful spotlight used to illuminate Leopards across the width of the Ewaso Ng'iro river. The bird perched near the light, and then sallied out for large moths, etc. as they flew into the glare. This activity was observed at 7.15 pm, when darkness had completely fallen, and it continued for another 30 minutes, after which the bird presumably went to roost.

This behaviour is unusual in that diurnal species of birds (e.g. flycatchers, thrushes, etc.) normally take advantage of the great quantities of insects attracted to such lights at twilight or brighter conditions, while only true nocturnal species (nightjars Caprimulgidae, Verreaux's Eagle Owl *Bubo lacteus*, Spotted Eagle Owl *B. africanus*) pursue this activity when darkness has fallen. The occurrence of this behaviour in Drongos at Samburu may be due to the great brightness of the 'Leopard Light'.

TRIBUTES TO AN EARLY MEMBER OF OUR SOCIETY JOHN RICHARD HUDSON

Some of the older members of our Society will, I am sure, still remember J.R. (Dick) Hudson and will be sad to hear of his death in England on 22 January this year after a long, exceptionally interesting and influential career.

Dick Hudson, whose family position was at the mid point of no less than five successive generations of Veterinary Surgeons, himself qualified at London University in 1925. Two years later he joined the staff at the Veterinary Research Laboratory, Kabete. There he soon became engaged in research on a wide variety of animal diseases afflicting stock in East Africa, including Heartwater, Nairobi Sheep Disease and Rift Valley Fever among others, that was to occupy him for the next twenty years. He retired from the Colonial Service in 1947 and returned to England. There he worked for a few years at the Central Veterinary Laboratory, Weybridge, before going abroad again, first to South East Asia with FAO and later to the CSIRO in Australia. He and his wife Margaret retired for the second time in the south of England. However, he remained actively interested in veterinary matters until the end of his life through, amongst other things, his advisory visits abroad,including Kenya,and his membership, and presidency, of the Veterinary Research Club in England.

At heart Dick Hudson was a countryman and was a keen and knowledgeable naturalist. He was a Life Member of our Society, with which he was associated for nearly sixty years. He

became a member of the Executive Committee in 1933 and in addition acted as Honorary Editor of *The Journal of the East Africa and Uganda Natural History Society* from 1941 - 1946. When he retired from these positions prior to leaving Kenya it was noted that, largely through his efforts, the *Journal* had become recognised by institutions all over the world as a leading publication in its field. His own particular interests were wide, ranging from what some of us doubtless consider the less attractive members of the fauna such as tapeworms and army worms to butterflies and birds, on all of which he contributed papers to the *Journal*.

In himself Dick Hudson was a quiet, friendly and unassuming man with no ambition for his own recognition and advancement. But he was always ready to give practical help and suggestions to anyone who sought his advice and thus had an impact far beyond his own generation and his own particular contributions to scientific knowledge. After his death his younger son John wrote to me "I think he must be one of the few people in the world of whom it can truly be said that he had no enemies". He will be remembered with great respect and affection by his numerous friends and associates in many parts of the world.

Jane B. Walker.

When Dick Hudson returned to Kenya in 1967, to advise on the Contagious Bovine Pleuropneumonia research programme at Muguga for FAO, he immediately resumed his active participation in the doings of the Society and impressed us all with his encyclopaedic knowledge of the local fauna and flora, to the extent of remembering the local vernacular names of many, this after an absence of about twenty years!

He participated enthusiastically in the ringing scheme, when we were ringing hundreds of Yellow Wagtails in a roost at Kabete, and I remember him crashing around with us in a dense stand of Napier Grass at night with great verve and enjoyment extracting Yellow Wagtails from the nets.

I was personally privileged to work under him for several years at Kabete when I started work there, and will always remember him with affection and gratitude for all he taught me, both in Laboratory techniques and many aspects of natural history

Dick was *never* too busy to help other people.

Daphne Backhurst.

LETTER TO THE EDITOR

Dear Sir,

BLACK-LORED CISTICOLA IN NANDI HILLS

With reference to the letter on the above subject, and to your editorial comment, published in the *EANHS Bulletin* Vol.20 (1) of March 1990, I should like to endorse the opinion of John Harpum that the "duet" of the Black-lored Cisticola sounds like "a rusty iron gate swung back and forth on its hinges".

Having lived in the Southern Highlands of Tanzania for many years - where the "duet" or chorus of *C. nigriloris* is a characteristic sound in grassland areas - I would never describe the song as "flute" or "bell" like. In fact long before I became interested in birding, or even observed the Black-lored Cisticola through binoculars, I always referred to it as "the Squeaky swing bird". However, having said this, the description of the bird seen by the authors of the above letter does sound remarkably like *C. chubbi nigriloris* as it occurs in the Southern Highlands of Tanzania.

It is interesting to note that in Birds of East Africa (Britton 1980), *C. chubbi* and *C. nigriloris* have been "lumped", with the comment that this is a species distinct from *C. hunteri*, with which it forms a superspecies. In Mackworth-Praed & Grant the calls of both the Black-lored Cisticola

and Hunters Cisticola are referred to as being "flute-like", "bell-like" and "silvery". Perhaps we are talking of another race of either *C. chubbi* or *C. hunteri*?!

E.A. de Leyser, Box 40, Mufindi, Tanzania.

VISITS TO SERENGETI

Braving all the man-made obstacles, we were recently on two long safaris in the Serengeti National Park. The park itself is far less damaged by man than are comparable spots in Kenya.

The Serengeti is accessible to private motor cars crossing at Sand River near Keekorok. The journey albeit expensive and full of bureaucratic surprises is of good value. The condition of the range is excellent (five years with good rains) and there is abundant birdlife and great numbers of game. It is important to know where to find the greatest concentrations of game, particularly if one wants to see the migration. This information is best acquired at the time when the safari is planned and not left to the time of arrival, particularly as neither at the gate nor even at the information centre at Seronera is one likely to get satisfactory answers.

The main roads within the park are good, as are most of the tracks. There is uncertainty about the regulations though, and as there is no public notice at the gates and no leaflets are handed out, one wonders where one is supposed to have learnt about the rule that one is not allowed to approach an elephant nearer than 300 metres? (This is supposed to be a safeguard against elephants getting too used to motorcars, but it is a hard and unenforceable rule, particularly as the authorities forgot to notify the elephants. To our great embarrassment, we found ourselves surrounded by elephants and it may have appeared that we were lawbreakers!)

Also, it is not clear where one is allowed to drive off the track and where not - and what constitutes a track?

Furthermore, when we were at the Kopjes, just north of Naab Hill a rather unpleasant ranger guide who was with a group of tourists, wanted to apprehend us for being there without a guide, yet no one had told us that one needs a guide anywhere and I doubt that there is such a rule.

But never mind the ambiguities of officialdom and the silliness of bureaucracy (of that, more later). It is something to be amongst all that game and to be more or less alone. For except for some places around the lodges, and some particularly well known points, one is alone. Whether this is the result of a well designed policy (not to build more lodges, not to allow camps, make entry and camping expensive and thus restrictive and so to preserve the range) is not clear, or whether it just so happens that the Tanzanian tourist industry is not more developed, I do not know. I suspect that the combination of a praiseworthy philosophy and the shortcomings of the industry create an atmosphere where one can spend a whole day amongst the migration without seeing or hearing another car.... If one experiences such, one is bound to forgive officialdom, even the other rather annoying circumstance that your permit for the Serengeti is not good for the Ngorongoro conservation area and also that the boundaries between the two have been moved! Nduto is not in the Serengeti now, never mind the map they try to sell you for $5 shows it quite clearly as part of the Serengeti.

If you are a Kenyan and want to go to the Serengeti without breaking any laws, you need to take a foreigner with you who has plenty of US dollars in cash.

The journey starts at Nyayo House where a friendly gentleman will stamp you passport documenting that you have left the republic. You have to declare where (Sand River) and when (date) you want to leave and he will oblige.

Now you drive through the Mara. The safari starts at Dagoretti Corner and the old Naivasha road down the escarpment is a real treat for your "forex" carrying guest. Press on: from the Narok turn off the road improves and one can make the nearest gate of the Mara in 4 hours!

At the gate there is a little hold-up as you have to give your name and P.O. Box number to

a Masaai gentleman who commits this in triplicate to paper and then in triplicate to another paper. You pay Sh.130 for every person and Sh.130 for the car. You get two receipts; one for the people, one for the car - although it is unlikely that a car would be allowed to pass without a driver, nor is one allowed to enter without a car.... To keep you occupied, you are asked to enter into a book all the data which you have just confessed. Do so without demur, you will need practice. Just 13km further on another book is waiting for you. Those 13km (5 to Keekorok and 8 to Sand River) are witness to the fact that the Narok Rural Council is not spending any of your Sh.130 on road maintenance within the reserve.

Soon you are at the Sand River gate and are welcomed by two friendly policemen. Now, have you told the gentleman in Nyayo House the right date? Have you checked whether he did stamp the requested date into your passport? Or have you indeed forgotten to start your safari at Nyayo House? If so, your legal safari has ended. If you are a date too early, do not despair, you can camp at the Sand River and cross the next morning - having complied with the only additional requirement: signing the book.

You cross the Sand River and after a kilometre you leave our republic and the Mara. this you will notice because there is a sign to welcome you to the Serengeti - but even if there was no sign, you would notice it, for the road is incomparably better than those in the Mara. You are alone now, you have left "Picadilly Circus" behind.

After some 15km of driving through no man's land, you arrive at Borongoja where a friendly swarm of joyous civil servants of the neighbouring republic is waiting for you. Also waiting for you are many books wanting to be signed and many pieces of paper eager to have your name, passport number, address, car number and other data written on. Immigration is straightforward (the entry declaration, a book to be filled out, bang, bang and you are properly in Tanzania!) But you will be asked to read one of the many faded multilingual notices on the wall: everyone of you has to change US$50 to gain entry into this hospitable neocapiltalistic country! Do not panic, keep a straight face, in Borongoja the drawers contain dollars and there may not be enough shillings for such a transaction and you find some accommodating solution to the problem....

Next you sign the book for the import of your motor car. For this transaction you must take the log book along and on some days even a photocopy of the log book, for this may need to be deposited. Among other things the book you are about to sign (for the importation of the motor car) asks is for the age. It is your age the book wants to know not the car's age, this was found out when I proudly wrote "New".... and I shall not forget the look of the kind police officer....

Now you go to customs. Here you first declare in the usual manner all the moneys you carry - I mean your guest does all that. If you do not want to be unpopular with the customs officer, do not declare the Kenya shillings which you have brought with you (by an oversight), because he, who knows that you did make a mistake, will want to help you remedy the mistake and this he cannot do if you declared the Kenya bank notes....

Now you pay the road licence. This costs $60 and you may whizz up and down Tanzanian roads for three months for it. Alas now the $60 must be encashed, this certified and the sum duly deducted from the imported amount which was declared just a moment ago. Now the customs book requires a few data to be entered and you are now free to move about in our sister republic!

But not the Serengeti, not yet. For this some more dollars need to be surrendered and quite justifiably so! To be precise: the daily charge is $30 per car and $15 per person. Fine. Let us pay and go! But the electronic calculator industry has seen to it that the matter is not that simple: on the official permit the figures have to appear in dollars and in the local currency, therefore, there is an awful lot of calculating to do.... Also the freshly imported dollars now spent.... Encashmment certificate.... Endorsement on the declaration forms....! And beware if your dollar-carrying guest has not got the correct change, for the Tanzanian government has elevated the "hakuna change" habit of all officials to the policy of the state. No change in dollars! Thus the state confiscates a little more of the coveted greenbacks and gives you a handful of the local produce.

You want a map? That costs $5 but do not buy one, it is a worthless map, look at and quickly copy the one which is hanging on the wall. That is not accurate either but at least you can copy it free of charge

Before you go you have to of course, sign the book and fill it with exactly the same information you committed to all the other books and pieces of paper.

Now all the officials see you to your car and - it has happened I am told - may even offer to do a little money changing, and their rates are far more realistic than those of their employer (but this is just hearsay...).

Fuel? Well, there is sometimes fuel at Lobo and always fuel at Seronera. When we were there, there was indeed fuel at Seronera, in the big subterranean tank but the pump was broken (but there is always fuel at Ngorongoro we were told. When we got there, there was none).

Water we got at the lodges but that was given rather grudgingly and there is no official watering point, we were told, anywhere in the park.

* * * * * * *

We were camping. The matter of the camping fees is another convoluted story. The normal camping fee is $10 per person per night. Camping is only permitted at designated campsites. The camping fee at special campsites is $40 per person per night... The problem is that some gentleman in Dar es Salaam issued a circular according to which all camp sites in the Serengeti - except at Seronera - are special and that Nduto is special as well! The clerk at the gate does not want to argue so he says pay when you get there.... When you get there: Well, in Lobo the clerk was ill, for that the warden woke us up during the night and accused us of illegal camping.... At Nduto there are two designated camping sites and there were a dozen parties camping all over the place I think to ask for $40 per person per night is simply impertinent. In neither place was the grass cut; there was no water; there is no toilet at Nduto and the toilets at Seronera and Lobo are dilapidated. There is no firewood and worst of all every campsite we have seen was full of rubbish. (Fortunately the Senior Warden of Serengeti is aware of the unreasonableness of a $40 fee and therefore the fee is subject to negotiation with the clerk - I suspect that in this way the economy is fed by the dollars as well, but, at the grassroots?!)

* * * * * * *

By now some readers may ask why in the world should one put up with so much hassle, pay so much money and be treated like a lawbreaker "Why, indeed, should Kenyans bother to go to the Serengeti at all". Well, there is the beauty of the varied landscape, there is the variety and numbers of species. There is the opportunity to see, as we did at sunrise on the plains south of Nduto, wildebeest, their columns spanning the range like arches from horizon to horizon the summit of Oldeani peeping from above the low stratus clouds. There were tens of thousands of European Storks interspersed among the zebra and the wildebeest. Pallid and Montague's Harriers were quartering above the verdant land. Muddy hyaenas were trotting home to their burrows whilst bat-eared foxes emerged from their homes stretching and yawning. Bustards of many kinds were displaying and on the only rock in sight sat two male cheetah looking towards the sun which had just burned away the stratus...

At Lobo we saw a leopard dragging a grown impala into the branches of a sausage tree and we sat for hours with our leopard whilst he went about his solitary, rather monastic - and arboreal - routine.

Later we sat on a kopje at the lodge. The sun was setting. The hyraxes were urging their young to seek cover as there was a Verreaux's Eagle perched on the summit. The baboons were about to turn in but the pasha declined, deciding that perhaps the campers would be careless enough to provide for an after dinner delicatessen. The black hulks of veteran buffalo bulls were dotted on the pastures between the rocks and we saw with astonishment how three hyaena

investigated a sleeping bull and how they fled when he, woken up by their unkind interest in his tail, jumped, turned and attacked... A pride of nine lionesses were trying to catch a warthog: it took them a long time to encircle the quarry but then they botched the final pounce and the hog went to earth. Their master, a scarred, torn-eared lion sat on an anthill - like a general overlooking a battlefield- and when he saw the inglorious outcome of the campaign, he yawned, rolled down from his promontory and went to sleep. Just a hundred metres further, hidden in the tall seeding grass, sat two young lions. They were eying the lionesses,gazing at the lion and once in a while turned their heads to inspect a small herd of buffalo

At every campsite there were visitors during the night: buffalo, bushbuck, porcupine, mongoose. There were lions from dusk to dawn and one morning there was a hyaena who was obviously exercising his jaw muscles and in order to do so crushed one of those throw away cylinders of a "gaz" cooker...

One hopes that the habit forming preoccupation with dollar collection will not over-ride concern for ecology and range quality. Also that the multifarious and exemplary research efforts which benefitted from the absence of tourists will not be sacrificed to mammon.

* * * * * * *

The lodge at Nduto is unassuming but comfortable and one is well looked after there. Seronera is drab and uninteresting, also every tourist we met complained about service, food and comfort. The jewel is Lobo, wedged between the boulders of a kopje and surrounded by fig trees. This lodge is well kept, clean and comfortable but the local beer costs Ksh.30 per bottle even if one calculates with the most favourable true market rate.

* * * * * * *

The intrepid and patient Kenyan and his dollar carrying visitor must consider one obstacle on this trans-Mara journey though, an obstacle which is not man-made: half-way between Borongoja and Lobo one has to cross the Gurumeti River and swamp. When in flood this river is not fordable - anyway, not without snorkels - on the main road. Turning east, one might find the old ford some 3km up river, but this ford is outside the park boundary and thus not signposted and not maintained either. In my recent experience the river welcomes the southbound explorer but when the said explorer is retracing his steps towards the north, the river is trying to prolong his stay in the Serengeti. On one of our journeys, we found a roaring stream barring our progress towards home and this time the stream was even more tenacious than the local bureaucracy; it took us many hours to cross, thus we have one more unforgettable adventure to reflect upon, another adventure in the incomparable Serengeti!

Imre Loefler, Box 47964, Nairobi.

KAKAMEGA FOREST RESERVE AND RONDO

We had not camped in Kakamega since 1982 so were pleasantly surprised to find the Reserve, with its carefully maintained grid of paths, remains an impressive wilderness. The total area has been reduced with tea plantations on the periphery, but obviously the Forest Department is at last making a serious effort to preserve the remnants of this once vast expanse of indigenous growth, reduce tree felling and eliminate the cattle drives that often clogged the major trails.

Bird life may be down a bit, and undoubtedly some species have disappeared due to degradation of the surrounding area, but this mecca for ornithologists still displays most of the 305 species of weird and wonderful Western Kenya types noted in the list compiled by G.R. Cunningham van Someren in 1979.

The primate population has increased considerably, with the cumbrously named Black-cheeked White-nosed Monkey (better known as the Red-tailed Guenon, a central Africa species found in Kenya only in Kakamega Forest) making a successful effort to maintain parity with the Colobus and Blue (Sykes) troops that also swarm in every tree top.

No larger mammals inhabit the forest, so one can wander the trails secure in the knowledge that the ominous thrashings frequently heard in the dense undergrowth a few metres away is only a sub-human primate (monkey or scientific researcher) not a buffalo.

The Forestry Guest House with its four sparsely furnished rooms (come self contained with bedding and lights plus soap if you ever use the stuff), elevated on a three metre high platform still accepts tourists at a small charge per person per night, while the surrounding space available to campers has been enlarged in a shady clearing (at a smaller charge) with fire wood and running water to hand. A night askari sleeps nearby, and Leonard Musingi, who has been managing the place for a decade now, is around daily. Leonard also acts as a guide upon request and, since someone donated binoculars and bird book a few years ago, has developed into a superb spotter well aware of where the rarities reside.

Alternative accommodation is now available at the Rondo Retreat and Conference Centre a couple of kilometres away where the Rev. Michael Carlisle has been refurbishing a garden estate since 1986. Surrounded by a huge hedge, the main house, constructed in 1928, sits amidst an immaculately maintained lawn under ancient indigenous shade sharers. A stream forms one border, and paths lead through exotic flowering shrubs to a waterfall and a commercial fish cultivation pond which may in some future incarnation become a swimming pool. You can take a dip in it now if you want to risk being gummed to death by the hundreds of tilapia in residence.

Tenting on the lawn is permitted and three guest bedrooms in the house can accommodate up to six. Meal arrangements are flexible and anything from no to full board can be had, details of the charges and reservations can be obtained by writing to the Rev. Michael Carlisle, Rondo Retreat Centre, P.O. Box 2153, Kakamega or phone 035-51019/51054 on Thursdays between 2 & 5 p.m.

In the past Rondo was the headquarters of a sawmill, later an orphanage and in 1986 the movie "Kitchen Toto" was filmed there. currently, the Rev. Carlisle is in the midst of altering the house and plans to build several self help, fully furnished, private kitchen equipped cottages, and hopes to reopen within the next few months. The way up from Nairobi has been vastly improved by a new shortcut; take the Nakuru - Edoret highway, 95km past Nakuru turn left on tarmac (C36) into Kapsabet. About 4km past Kapsabet on the Kisumu road turn right on to the road signposted Kisieni (D267) which leads past Rondo, about 3km on the left and another short distance to the Forest Guest House on the right. This is a good dirt road which eventually leads to Kakamega township, while the driving time from Nairobi is within the 4 - 5 hour range.

We spent a week sorting out the various avian attractions, and since we are only able to identify the Large, Loud or Gaudy were rewarded with the Great Blue Turaco which is about as L. L. & G as birds get. Ray Moore's Where to *Find Birds in Kenya* has a map of the area (p.112) indicating paths outside the reserve that no longer or never existed, some are just overgrown and a little panga work will get one through. The weather in any month is unpredictable but this time we were lucky to incur sunstroke while Nairobi was under water (2-8 March) and we did more walking than I have since Ford sold me his first Model A.

Take the entire family. There is a decent chance the kids will get irretrievably lost in the woods, and though while birding and monkeying around may not be everybody's cup of tea, it sure aint like so many other enticements in life which are invariable fattening, or expensive, or addictive.

Bill Shadel, Box 30137, Nairobi.

REQUEST FOR INFORMATION

A request has been received from Dr. J-P. Biber on behalf of ICBP for information on the Lesser Kestrel, as outlined below. If any member is able to provide such information please write direct to him at the following address:

Dr.Jean-Pierre Biber, Steinengraben 2, CH - 4051 Basel, Switzerland.

Dr. Biber writes:-

- I have been contracted by ICBP to prepare an "Action Plan to save the Lesser Kestrel in the Western Palaearctic and Africa" for the Commission of the European Commuunity. The objectives of this work are:
- to review and assess the threats to the species in the breeding areas in the Western Palaearctic, during migration and in the wintering areas of Africa.
- to establish a document for all range states giving concrete recommendations for actions to improve the ecological situation for the species.
- to distribute the document to the relevant government agencies and non-government organisations, and to lobby the Commission of the European Community for support for follow-up activities.

It is quite obvious that this work needs the help of many people, if it is to be done seriously. Therefore I write to you in the hope that you will be able to give me information on the following points:

- status and population changes of the Lesser Kestrel in your region.
- facts and ideas on the threats the species faces:
  - climatic conditions
  - direct impact of changes in agricultural methods (pesticide remains in its prey provoking egg-shell thinning). Here any information on the types and quantities of pesticides which are being applied close to habitats used at any time of the year by the lesser Kestrel and the time (season) when these are applied is of great value
  - indirect impact of changes in agricultural methods (pesticides and other agricultural practices reducing abundance and/or availability of prey species)
  - impact of interspecific competition for nest sites with Jackdaw *Corvus monedula* and other species
  - any other threats
  - ideas on the measures to be undertaken to improve the situation for the Lesser Kestrel
  - regional literature on the Lesser Kestrel.
  - any other ideas

- ideas on the measures to be undertaken to improve the situation for the Lesser Kestrel
- regional literature on the Lesser Kestrel.

MEMBERSHIP:
This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the Joint Society-National Museum Library (postal borrowing is possible); a copy of the EANHS BULLETIN every four months and a copy of each Journal published during your period of membership. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

JOURNAL:
The Society publishes the Journal of the East Africa Natural History Society and National Museum. Each issue consists of one paper; sometimes two or more short papers may be combined to form one number. Several may be published during one year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

EANHS BULLETIN:
This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS BULLETIN), P.O. Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs can be published.

SCOPUS:
The Ornithological Sub-Committee publishes this bird journal five times a year, cost Kshs. 100 per annum. All correspondence to D.A. Turner, P.O. Box 48019, Nairobi, Kenya.

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Subscriptions are due by 1 January. From July you may join for Kshs 50 and receive publications from that date. Application forms for membership are obtainable from the Secretary, P.O. Box 44486, Nairobi, Kenya.

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HUERNIA ARCHERI — AN INTERESTING REDISCOVERY

A small succulent plant was given to me for identification, and I was pleased to see that it is *Huernia archeri* Leach (Asclepiadaceae). This species was previously known only from the original type collection, and so it rediscovery is a noteworthy event.

The species was first collected by Philip G. Archer in January 1976, though the name *Huernia archeri* was not published until 12 years later (Leach 1988). Archer collected the plant on coral limestone near Kilifi, and as far as I am aware nobody has collected it again in the same area. The new gathering reported here was made by Ann Robertson and Quentin Luke, on a rock outcrop in the Muluganji Forest Reserve, in south-east Kenya (*Robertson & Luke* 6014, EA). The new locality is about 70 km from Kilifi, and it is quite likely that other populations remain to be discovered in Coast Province.

Huernia archeri has prostrate, succulent, green, 4-angled stems, that grow amongst rocks in shaded situations. The leaves are very small, and the task of photosynthesis has been taken over by the stem. The flowers are about 36 mm in diameter, and are yellowish with scattered maroon blotches. The corolla is covered with prominent papillae. The long, attenuate corolla lobes and sepals, and the slender trailing stems, distinguish this species from the related *H. erinacea* Bally, which occurs in northern Kenya. Another related species is *H. recondita* Gilbert, from northern Kenya and south-west Ethiopia, which has shorter, 5-angled stems, and more slender papillae on the corona, as well as some differences in details of corona structure.

All three species mentioned above are represented in herbaria by very few specimens, which would suggest that they are rare plants. This is in contrast to *Huernia aspera* and *H. keniensis*, both of which are quite widespread and fairly common, especially in the highland areas.

REFERENCE

Leach, L.C. 1988. A revision of Huernia R.Br. (Asclepiadaceae). *Excelsa Taxonomic Series* No.4. Harare.

Leonard E. Newton, Dept of Botany, Kenyatta University, P.O. Box 43833, Nairobi.

THE EANHS NEST RECORD CARD SCHEME

Eleven years after the Society published *The Breeding Seasons of East African Birds*, it seems an appropriate time to remind members of the existence of the EANHS Nest Record Card Scheme, and to invite all those who are interested to contribute to it. The Scheme aims to provide data on the breeding of East African birds. It was initiated in 1969 by the late Leslie Brown, although nest records had been collected in a less formal manner since 1961. Other nest records dating back to the Society's earliest years have since been transcribed onto cards. The Scheme's card file is now housed in the EANHS office and contains many thousands of dated records.

The scheme serves several purposes. Most obviously, it provides information on basic breeding biology: nest sites and construction, clutch sizes, breeding behaviour, nesting success and so forth. It provides distributional information on breeding birds, used for instance in the recently published *Bird Atlas of Kenya* (Lewis & Pomeroy, 1989). Finally, it is intended to shed light on an ornithological problem area: the seasonality of breeding in East African birds.

Generally, it is assumed that birds time their breeding so as to ensure a plentiful supply of food for their chicks. In temperate areas, this usually means starting to nest early in the spring. There is a short and relatively predictable period when conditions for raising the young are suitable, so breeding seasons are well defined and well understood.

Nearer the equator, things are much less clear cut. Tropical regions may be just as seasonal as temperate ones, but rainfall rather than temperature is usually the most important environmental factor. Unfortunately the timing and amount of rainfall is notoriously unpredictable in many areas, and often differs greatly from year to year. In East Africa especially, there is also great variation in rainfall patterns from place to place. Within Kenya, for example, there are about five broadly different rainfall regimes (more on some classifications) with numerous local variations. Add to this differences in altitude and habitat type (the seasonality of food supply in a forest may be quite different to that in a savanna), and the problems of interpreting the breeding seasons of tropical birds become painfully evident.

In 1979, Leslie Brown and Peter Britton attempted such an interpretation in *The Breeding Seasons of East African Birds*, published to celebrate the Society's 70th Anniversary. This book summarised the data then available in the Nest Record Card Scheme along with other unrecorded observations (many of which were later entered onto cards). *Breeding Seasons* was a valuable synthesis that presented much important new information. In very many cases, however, firm conclusions were impossible for a simple reason: lack of data. For numerous species there were no dated breeding records at all. Where some cards did exist, there were fewer than ten records in about half the cases. In only a handful of species were there enough data for meaningful analysis. Even then, variations in rainfall between years and areas could not be taken into account properly. We need many more cards before this sort of analysis can be attempted.

What sort of information should observers supply? A nest record card can be filled in for any definite breeding record. Definite records include nests with eggs or young, young being fed by parents outside the nest, or flightless young accompanying adults (in "precocial" species like guinea-fowl or ducks). The more detail that can be given, the better; some idea of the size and development of young birds is particularly useful, since it allows the date of egg-laying to be estimated more accurately. If you are able to follow the progress of a nest over a period of time, that is especially useful. However, even single observations are extremely valuable in building up our data base. So are observations of even the commonest species. Indeed, it could be argued that records of common birds are the most important of all for the analysis of seasonality, since probably only for these species will we eventually have enough data to relate breeding seasons in detail to environmental factors.

Except for little-known species, there is no need to record isolated cases of displaying, mating or nest-building, since these behaviours can never be guaranteed to lead on to a genuine breeding attempt. The same is true of birds entering nests in holes or other inaccessible places when there is no indication of active breeding. For example, many barbets roost in holes all year round.

Apart from the breeding data themselves, the most important information to record is an accurate indication of the date and the place. Although there is no formal slot on the card for it, it is very helpful if contributors can record the atlas square, following the code in the *Bird Atlas of Kenya*. It is even better to go a step further, if possible, and give the approximate latitude and longitude of the site. This will help at some future date when a new Bird Atlas is produced on a finer scale than the present, rather coarse, quarter-degree square.

All this may give the impression that the Nest Record Card Scheme is a passive archive of accumulating information. In fact, requests are frequently received for data from its cards. Recently, for example, we have transcribed all Ugandan nest records for the *Bird Atlas of Uganda*, despatched information for researchers interested in the breeding behaviour of Bat

Hawks and wing-carrying of young in bustards, and described the running of our Scheme to the British Trust for Ornithology, who are restructuring their own (far larger) collection of nest records. A report on the last three years of the Scheme should be published soon, and it is hoped that annual reports will follow. The purpose of these is to make basic data more easily and widely available, and to highlight any particularly significant records.

While the collection has grown substantially in the last decade, there does seem to have been some falling-off in the rate of contributions. It would be good to see this trend reversed. Any Society member can obtain Nest Record Cards free on application, together with an explanatory leaflet on how to fill them in and, if needed, a guide to the atlas square numbers (for Kenya). All contributions are very welcome, and all contributors are acknowledged in the Scheme's reports. For anyone with an interest in birds, at any level, this is a way that you can easily make a significant contribution to the development of our knowledge.

REFERENCE

Lewis, A. & Pomeroy, D. 1989. *A Bird Atlas of Kenya*. Rotterdam: Balkema.

Leon Bennun (Nest Record Scheme Organiser), EANHS, Box 44486, Nairobi.

THE MAGICAL SPRING AND THE MURDERED WIFE

At midday during the dry season (which seems to be most of the year around here), it is glaringly hot and searingly dry. As soon as one walks out beyond the cottage gate, one is scratched by stiff grass stems and spiked by ubiquitous thorns. The path consists of puffs of dust winding between scorching stones. Mount Kenya's glaciered peaks have vanished under their quilt of cloud, while in the opposite direction the mountains of the NFD shimmer mirage-like, mauve in the desert haze. But just behind the cottage — the reason the cottage is here— is a haven of coolness, dark and damp.

From a crevice in the bush-grown wall of a natural ampitheatre streams crystalline water that has percolated down through Mt. Kenya's lava slopes. The spring is engulfed by a grove of towering yellow-barked acacia and the rivulet that emerges is bordered by slender wild palms with clusters of golden dates and evergreen sysygiums with bunches of purple black fruit. But the soul of the spring is one enormous fig tree. The short main trunk is fluted like a colossal Greek column, then spreads symmetrically into six great branches, the lower ones almost lateral. From these, smooth young branches shoot, sapling-like, skywards. The overhead bulk is balanced by massive buttressing roots, as long as the branches are wide. Their moss-cushioned curves enclose dark-bottomed little pools through which the limpid water purls in small eddies and splashes in miniature waterfalls.

Myriad birds flock in the crown, rustling with the breeze in the huge heart-shaped leaves, searching for the millions of insects lodged in the cracks of the rough grey bark and living on the shiny smooth leaves. I occasionally get a glimpse of crimson as a turaco glides in, but the tree is so tall, the foliage so thick it is difficult to see the birds. Their voices, however, are unmistakable: the fluting of orioles, the squeaks of parrots, the sudden shrill chorus of wood hoopoes, the incessant chattering of starlings (I think they must talk with their mouths full) and the murmurings of many sorts of pigeons. Some of the insects are easier to see. One, the minute Egyptian scale that lives — along with several other species of scale — on the underside of the leaves clothes itself with delicate white frills; when the leaves fall the ground appears to be covered with snowflakes. The huge leaves (some 30 cm long and 30 cm broad) litter the ground and large fallen figs, decomposing from green or ripe orange-red to a squidgy

brown, bob in the natural tubs. The humus must be many feet deep, for the ground is spongy underfoot. During the daytime the vervets disport themselves in the boughs; at night the tree hyraxes scream bloody murder doing God knows what, while the whistling bats collect fruit which they deposit — splat — on our little spring-watered lawn. The great fig is a forest unto itself, so magnificent that it both literally and figuratively overshadows the spring. It is so prepossessing that when one first enters this magical domain one hardly sees the water for the tree.

This sylvan oasis in the thorny scrub and dry grassland is magical for everyone around here. This area is called Ngare Ndare, from the river nearby which is the only permanent one in this region. It is a Maasai name, meaning "River of sheep", i.e., where sheep are watered. This savannah was once seasonal Laikipia-Maasai grazing ground. In 1911 the Protectorate Government signed a treaty with the Maasai, declaring Laikipia to be a Maasai reserve "until the end of time". The end of time came in 1912 and by 1913 the government had evicted the Maasai and was turning the area over to European settlers to develop the grazing land into ranches. Some of the Europeans have left, selling their land to their erstwhile employees, mostly Meru and some Kikuyu. Although the scant rainfall makes the area marginal for agriculture, the river and springs can be tapped for irrigation, so the new settlers are clearing the land for cultivation. The whistling thorns are being hacked down faster than even they, weedlike, can grow, in order to make way for maize fields, and the grand yellow-barked acacias are being chopped up for charcoal. I wondered — aloud — about the fate of the fig tree. Miriti, the young Meru who told me about the *Kiebas* (*EANHS Bulletin* 1990: 24–25) reassured me about the tree that his people, like the Kikuyu and Swahili, call the *Mukuyu*.

"It will never be touched, for if the tree is cut, the spring will dry up. Forever." Kimutai, our Kipsigis factotum, concurred.

There are numerous springs streaming — one literally gushing— out of this volcanic ground. Two are very close by. (This is probably the "place of three springs" that Donaldson-Smith described in his book about his walkabout in northern Kenya at the turn of the century.) Each spring has created its own sylvan grove and each has its own arboreal soul, a particularly huge fig tree. Each is similarly sacrosanct. Half a century ago some itinerant strangers had the profanity to fell one such *Mukuyu*; the spring, of course dried up. The scandal is still vividly recalled, and even young Miriti could show me the site. (On the other hand, two large yellow-barked acacias have been felled in one spring and turned into charcoal on the spot, but no such dire calamity has ensued.)

Only one other spring, however, has a *Mukuyu* as grand as ours. Most are of a somewhat smaller leafed variety. I hesitate to give the botanical names of the figs since botanists are in the process of revising (unbeknownst to it) the genus *Ficus*. Dale & Greenway list 36 species in their classic *Kenya Trees and Shrubs* (1961); this is being reduced to 30, and some of the names are being changed. (The botanist at the East African Herbarium — one of the most helpful institutions I have ever had anything to do with — who is reclassifying the Kenya figs, very generously gave me an advance copy of his work.) Our immense fig tree is however, still the same *F. vallis-choudae* to botanists, just as it is *Mukuyu* to most of the locals. But some call it by other names.

The locals are not only Meru and Kikuyu. There are a few Kipsigis who, like Kimutai, have been working here for a very long time; they call the tree *Mogoiwet*. There are also a few Sakuye-Boran settled here; they hie from Isiolo and Kinna where they call the tree *Onda*, *Warta* or *Kilta* (the Somali name). There are also a number of Mukogodo who have shifted here from their forest which lies to the northwest. The Mukogodo are one of the many small groups of traditional hunter-gatherers who are generally known, especially to Europeans but never to themselves, by the derisive term *Ndorobo*, the Maasai word for "poor (i.e. cattleless) beggars". The other people here call them "Maasai", for the Mukogodo have all but abandoned their own

unique tongue and have switched to the language as they adopted many aspects of the culture of their old neighbours, the Laikipia Maasai. But they still use their own name for the *Mukuyu*, *"Nabor"*. (And there is a small settlement — a few shanty shops — not far from here, called Naibor.) There are even a few Maasai proper, descendants of the handful that managed to stay behind during the great "Maasai move" by joining the Mukogodo. They all call the tree *Olponyi*. There are, in fact, representatives here of all Kenya's main linguistic-ethnic groups — Bantu, Nilotic and Cushitic — and they are all people who are still close to the soil, and to the trees. It is a perfect place to do a bit of informal ethno-botanizing.

All the people here agree that the *Mukuyu*, or whatever they call it, is not to be harmed. They all agree that the reason is because it contains milk-like sap and because it is associated with water. Both are scientific facts. Either singly is applicable to other genera; the two characteristics combined are applicable to virtually all species of *Ficus*. All fig trees exude more or less copious amounts of more or less sticky latex. (The prize example, of course, is an Asian species, *F. elastica*, the India Rubber tree.) As for *Ficus*' association with water, Dale and Greenway state that many, if not all, figs have the rare property of conserving soil moisture (and possibly increasing the fertility in the vicinity). A charming old English lady told me that years ago, when she and her husband first moved up to the Lolldaiga Hills where there was no water at all except the Timau River miles away, her Kikuyu gardener said "this place is too dry" — and so he planted a fig tree in her garden to remedy that. Miriti, when describing for me another kind of fig, wrote: "The tree grows naturally in places with water. It is a very important plant to the places because it prevents the drying out of water in the places. The tree provides (for) itself by adding dropping leaves to it." (The great number of birds and beasts attracted to the fruiting trees add their share of fertilizer; when troops of baboons move in, the area around a fig tree stinks like a Nairobi alley.) I asked Miriti why, since all figs have latex and are associated with water, the *Mukuyu* is considered special. Miriti then wrote for me the Meru story.

It is, as he wrote for me, "a terrible story". Once upon a time there was a man and wife who lived together for many years without having any children. But the wife refused to let her husband take a second wife. The husband decided to kill his wife, in order to marry another who could bear him children. "He bashed his wife on the head with a heavy piece of wood and the woman fell down with a bang. Dead." The husband dug a grave in the earth floor and buried his wife there in the hut. Almost immediately a strange plant sprouted forth from the grave. The man became nervous and went away, to stay with a friend. The plant kept growing, right out through the thatched roof of the hut. The neighbours saw it and wondered. They tracked down the man and asked him about it. He knew nothing, he had been staying with this friend. Where was his wife? He did not know. "The man was beaten and mistreated until he gave out the story. The people were terribly worried. They had not seen or heard of such a thing happening before. The tree grew tall and wide. The elders told the man to cut it, as he had killed his wife. When he cut the first axe blow, the tree produced a lot of white sap. There was a lot of "hoi hoi" by the people around. He was ordered not to cut it again, for the people said the tree was producing the milk of that woman who hadn't been suckled by any baby." From that day the tree was declared a sacred tree; no one could cut it or even eat of its fruit.

The place was abandoned. When, years later, the people went back to look at the scene of the brutal crime, the hut had decayed. The huge tree stood alone. And from its base was flowing a stream; it came out from between the roots as a baby would issue from a woman. To this day, if a person is drowned in running water, the bereaved relatives will rub the dry powder of a decayed *Mukuyu* over their bodies so that the same disaster will not strike the family again, for the tree that gave birth to running water also protects people from it.

And that is the story why no Meru, or Kikuyu, will cut a *Mukuyu*. Now I am reassured that no one will harm the one growing by our spring, so closely associated still is the *Mukuyu*

with the spirit of the murdered woman, and with the mystical quality of streams that appear unceasingly from nowhere to water this arid land.

Cynthia Salvadori with Miriti s/o Rintary, Box 477, Nanyuki.

REVIEWS

SEAWEEDS OF THE KENYA COAST.

By Shakuntala Moorjani and Barbara Simpson, edited by Anne Gunston, 1989.
Nairobi: Oxford University Press. ISBN 0 19 572671.
pp. 134. 92 Black and white plates. Price KShs.150.

I have had a passing interest in seaweeds for some time. They were the subject of my first academic botany course as a second year undergraduate at Cambridge and I recall as a child the pleasure of bursting the bladders of *Fucus vesicularus*, a brown seaweed of the European coast known as bladder-wrack. I was therefore pleased to see, displayed on the notice board outside Fort Jesus at Mombasa, in mid 1989, the cover of this book. It proved to be unavailable at the time and was only published later in mid 1989 (not 1988 as the title page shows). It was not until March 1990 that I was able to use the book, whilst on holiday at Tiwi on the south Coast.

The book is principally an identification manual and despite its title, wisely also covers the so-called sea-grasses, which are flowering plants with grass-like leaves and which can dominate the sandy and muddy lagoon shallows. It is the macroscopic marine algae to which the term seaweeds properly applies. As the back cover states, the coverage includes "all sea plants likely to be encountered along Kenyan shores".

The book is divided into two sections, text and plates. There is a useful glossary of terms and a reference list, including six important papers in the Society's Journal (1967–1979). The list emphasises that no other accessible work of the same scope exists.

The text begins with a brief introduction to the Kenya coastal environment (with a map), and a description of the three main ecological zones: intertidal, lagoonal and reef platform. Three specific shore descriptions and profiles complete the text. Between these related passages comes the "Inroduction to the Marine Flora", a description of the main groups (sea grasses, and the green, brown, red and blue-green algae) followed by keys to genera in these groups. "Descriptive notes" follow each genus, alphabetically ordered, and the notes consist of brief descriptions of the common species in each genus and their habitats, with reference to the plates.

There are 92 full page black and white photographic plates covering nearly all of the species mentioned. Apart from the genus *Caulpera* for which the five illustrated species cover plates 13 – 17, not 13a – 13e, each genus has its own plate number, so that the last is numbered 67. Regrettably, the plates lack contrast and are of varying size, shape, scale and orientation. In my copy, some of the plates have irritating "ghosts" of the plate on the opposite side of the paper. Another reviewer has mentioned the irrelevant miniatures of some plates randomly inserted on the inner margins of the text, without captions. Except that they come in the same sequence as the text, the plates do not indicate to which of the groups they belong.

How successful is the book for identification purposes? The keys and plates can be used in combination according to the user's preference, and rather successfully. This is not surprising for the book developed out of an identification guide first used for a sixth-form field studies course in 1972, so the keys have had ample opportunity for testing and refinement. Certain dichotomies in the keys required accumulation of experience to use, but this is

normally the case, and I found *Turbinaria* species and filamentous green algae difficult to name. Nonetheless I was able to name some 25 algae I collected, a few only with queries. It would therefore appear that the coverage is indeed sufficient for the student or the enthusiastic amateur.

In conclusion, the book is welcome and can be recommended to members enjoying a coastal holiday, who want to learn something of the variety of Kenya's seaweeds. No previous experience is required! If there is one disappointment I have (apart from the reproduction of the plates) it is that the ecological content does not go far beyond description, but that, like the production of a fully comprehensive manual, could perhaps form the subject of another book.

C. M. Lovatt.

Notes on availability:

The book is widely available in Nairobi bookshops and is on sale at the Fort Jesus Museum in Mombasa. Members outside Kenya can apply to the Secretary of the EANHS adding KShs.45 for foreign exchange conversion and KShs.50 for surface post or KShs.250 for airmail.

THE ELEPHANT BOOK For the Elefriends Campaign. By Ian Redmond, 1990.
London: Walker Books Ltd., 87 Vauxhall Walk, London SE11 5HJ.
pp. 48 with numerous colour illustrations and distribution map.
Price in UK only, £12.99

There is quite a lot of good in *The Elephant Book* by Ian Redmond which is saying much as it has 48 pages with an average of less than 150 words on each. Not surprisingly, time has obviously been spent on the careful selection of the right words which give concise details of the life, physiology and behaviour of the African Elephant — as far as 6000 words can do.

The photographs are all coloured, having been chosen from a wide range of sources to illustrate the text which they do very appropriately.

The book itself is something of a personal plea from the author for the preservation of the world's remaining elephants as well as appearing as a representational publication for the newly formed conservation organisation ELEFRIENDS to which half the royalties are donated. If only for this reason it is sad that the pretentious format of the book is so open to criticism. The narrow columns of double spaced print, dotted with tiny photographs and barely quotable quotes detract enormously from the real content of the book. However, at around Sh.500/- it is not expensive and deserves support, not least because the subjects of the book benefit from its sale.

Rupert Watson.

RED-CHEEKED CORDON-BLEUS: SEARCH FOR A STUDY SITE

Ms Sarah Collins, a postgraduate student at the Edward Grey Institute of Field Ornithology in Oxford, is looking for a suitable study site in Kenya to investigate the breeding behaviour of the Red-cheeked Cordon-bleu *Uraeginthus bengalus*. This field study is intended to back up laboratory work on the mechanics of sexual selection in this species, which is monogamous but sexually dimorphic (the males have a bright red cheek patch). It addresses several important unsolved questions in the evolution of bird colouration and mate choice.

Ms Collins hopes to carry out her fieldwork from March – May 1991. Among other things, she will be looking at pairing behaviour, breeding success and parental care, and competition for nest sites. The study will involve colour-ringing about twenty pairs of birds.

Obviously this study requires a field site with a good concentration of Red-cheeked Cordon-bleus, and this is so far proving difficult to find. Are there any birdwatching members who have numbers of Cordon-bleus breeding in their gardens (and would be prepared to put up with a field study there!), or who know of another suitable study site in Kenya? Anyone who can help is requested to contact me through the society office.

Leon Bennun (Nest Record Scheme Organiser).

LETTERS TO THE EDITOR

Dear Sir,

Some months ago I was watching two elephants at the edge of the swamp at Amboseli. Some Black Crakes were disturbed by the elephants, and one immature Black Crake moved from the water's edge to the open ground in front of the car.

A group of Vervet Monkeys playing around in some dead trees about 20 metres away showed an obvious interest in the car and a few attempts were made to climb on to the bonnet.

Suddenly a young Vervet dashed forward and grabbed the unfortunate Black Crake chick and with the head of the chick in its mouth and the long legs trailing, the Vervet ran as if with a guilty conscience towards the dead tree where it took up position, and I watched it for some time, biting in the remains of the chick. It was impossible to see if it was actually feeding on the chick, later the Vervet disappeared into the bushes and I never saw it again.

Frants Hartmann, Box 633, Thika.

Dear Sir,

Request for information

As a former resident in Kenya and a member of the EANHS I would like to ask members for some help. I have promised Mr Wassmannn of Salzgitter, a member of the DBV (German Society for the Protection of Birds) to try and get some more recent information on the distribution, sightings or other records of the European Oriole *Oriolus oriolus* in East Africa. The oriole is the "Bird of the year 1990" in West Germany.

Anyone who can help is asked to reply to this address and I will forward their letters to Mr Wassmann. Thank you in advance.

A. Löhding, Eichelbergstr. 25, 7166 Sulzbach-Laufen, Germany.

The caption for the map on page 23 of the June Bulletin was incomplete.
Below is the corrected caption which, it is suggested, members could cut out and paste on below the map on p. 23. We apologise for this.

Fig. 1. Distribution of the genus *Delosperma* in Kenya and Tanzania.
(Δ = *D. abyssinicum*, ○ = *D. nakurense*, □ = *D. oehleri*; open symbols = herbarium records seen, solid symbols = populations studied by the authors.)

THE STATUS OF THE BLACK RHINO IN KENYA

On 17 September Mr Ted Goss of the Eden Trust lectured to 31 members of the Society on the present status of the Rhino in Kenya, having recently completed a survey for the World Wildlife Fund. He has presented a copy of his report to the Library.

He revealed that a 1967/68 census in Tsavo gave an estimate of 6,130 rhino in Tsavo National Park East and West; these are now reduced to less than 25 individuals, half of which are in the newly created Rhino Sanctuary in Tsavo West National Park.

Meanwhile, in the Nairobi National Park, where about 20 animals were introduced during the 1960's, the numbers have increased to well over 50, an alarming 10% of Kenya's total Rhino population, but a source for restocking elsewhere in the Rhino sanctuaries at Nakuru National Park and Tsavo West.

As most of the remaining rhinos are now in reserves or under constant surveillance, the population is probably past its low point and has a good chance of recovery.

C. Lovatt.

SOCIETY WEEKEND TRIP TO ELSAMERE

On 22/23 September, 15 members braved the Naivasha South Lake Road and met at Elsamere. The road is being repaired and when completed will make the journey a pleasant one. After lunch we looked round the Joy Adamson Museum and then walked around the grounds, seeing the Colobus Monkeys; one, a six week old baby, looked as if it were dressed in sheepskin!

We were puzzled by two colour forms - purple and yellow - of the two prickly *Hibiscus diversifolius*. There were two Verreaux's Eagle Owls in an Acacia. One, the warden told us later, had lost an eye in a fight with a Fish Eagle whilst trying to take over the Fish Eagle's nest.

On the Suday morning we drove along the tarmac road through the Geothermal Station into Hell's Gate National Park. We walked near the two "towers", volcanic plugs left standing from the period when Lake Naivasha overflowed and created the gorge. The Rock Hyraxes that live at the base of the towers were as amusing as ever.

We are grateful to Lise Campbell who led in the field, and to Clive Lovatt who organised the meeting.

DONATIONS

We are pleased to report two major donations to the Society confirmed in the last month. Barclays Bank and the Eden Wildlife Trust have each sponsored forthcoming issues of the Journal. The Society's thanks are extended to the donors.

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Below is the corrected caption which, it is suggested, members could cut out and paste on below the map on p. 23. We apologise for this.

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(Δ = *D. abyssinicum*, ○ = *D. nakurense*, □ = *D. oehleri*; open symbols = herbarium records seen, solid symbols = populations studied by the authors.)

MEMBERSHIP:
This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the Joint Society-National Museum Library (postal borrowing is possible); a copy of the EANHS BULLETIN every four months and a copy of each Journal published during your period of membership. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

JOURNAL:
The Society publishes the Journal of the East Africa Natural History Society and National Museum. Each issue consists of one paper; sometimes two or more short papers may be combined to form one number. Several may be published during one year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

EANHS BULLETIN:
This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS BULLETIN), P.O. Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs can be published.

SCOPUS:
The Ornithological Sub-Committee publishes this bird journal five times a year, cost Kshs. 100 per annum. All correspondence to D.A. Turner, P.O. Box 48019, Nairobi, Kenya.

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Subscriptions are due by 1 January. From July you may join for Kshs 50 and receive publications from that date. Application forms for membership are obtainable from the Secretary, P.O. Box 44486, Nairobi, Kenya.

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EAST AFRICA NATURAL HISTORY SOCIETY

CHAIRMAN'S REPORT FOR 1989 - PROF. STEVEN NJUGUNA

I feel honoured to take this opportunity to welcome all of you to the Society's 80th Annual General Meeting (AGM) and also to report on the management of the Society's affairs throughout the year.

This year's AGM is a very special one, for all of us here are halting, for a moment, to look back over 80 years to pay tribute to the EANHS for it's contribution to the advancement of the study of natural history in East Africa. In this, I wish to give special credit to my two predecessors Mr John Karmali, our patron, and Prof. John Kokwaro who have ably guided the Society during the last decade . BUT the real task in causing the respect with which this society is held by others has been accomplished by you, the members. Today is also a very special day for me, for it is my first anniversary as Chairman of this prestigious organisation.

Over the last year, the Society has continued to expand and grow in terms of membership and activities. The overall administration of the Society's Office has been smooth. The membership rose, exceeding the record figure reported during the previous year, to reach a total of 692 by the end of 1989. This increase was a sign of good management and the trust that members had in the outgoing Executive Committee. In achieving this, the Executive Committee, especially the office bearers, worked tirelessly on their respective assignments with great commitment.

I would like to express my most sincere gratitude to Ms. Lorna Depew, our Honorary Secretary, who has done a commendable job at the Society Office. Those members who have visited the office will have seen the re-organised "new look" of the front office which was part of our 80th Anniversary celebrations.

As part of the 80th Anniversary celebrations, the Executive Committee changed the size of the EANHS Bulletin from "A4" size to "B5" size and employed the latest laser-printing technology in its production. The Bulletin is thus now printed rather than duplicated. Photographs accompanying articles can now be reproduced. I am happy to report that members acclaimed the new EANHS Bulletin format.

The Society also produced an anniversary tie bearing our emblem and the initials E.A.N.H.S. I wish to thank Col. Cumberledge who made the arrangements from the design stage through to final production and delivery.

The EANHS Bulletin issue of December 1989 Vol.19 No.4 carried an account of the 80 year history of the Society compiled by Mrs. Peris Njuguna which also included old photographs of the Society's buildings and exhibitions. I wish to commend both her and Mr. G.R. Cunningham van Someren for their efforts in connection with this exercise.

It was also during the 80th anniversary celebrations that the Society introduced the family membership category which has subsequently become very popular. The botanical Sub-committee was revived and trips made to Limuru, City Park and the

Arboretum thanks to Dr. Clive Lovatt and also Mrs Ann Birnie, who led most of the trips.

The Bulletin, under the able editorship of Mrs. Daphne Backhurst, continued to appear regularly on a quarterly basis as Vol.19 No.1-4. The Newsletter was produced and posted promptly by our Hon. Secretary Ms. Lorna Depew.

Through the efforts of Mrs. Judith Rudnai and Ms. Lorna Depew the monthly evening lectures and film shows went well. A change in the starting time from 5.30 to 6.00 p.m. improved the attendance. The monthly camping and day trips were successful thanks to Mrs. Lise Campbell and Mr. Onesmus Kahindi. Mrs. Fleur Ng'weno, Mrs. Damaris Rotich and Ms. Maryanne Kamau continued to organise the popular Wednesday morning bird walks.

I would like to thank our Journal Editor Mr. Charles Dewhurst for his excellent editorial work and for initiating the formation of a Journal Editorial Sub-Committee. Under the Committee, Journal issues No.186 and 194 were produced. Scopus, which was reduced to two issues per year plus the Annual Bird Report, continued to be published by the Ornithological Sub-committee.

Our library functioned smoothly throughout the year and Ms. Rosalie Osborn attended to library matters regularly.

During 1989, the Society received a donation of K.Shs.3,000 from Mr and Mrs T. Nakagawa to assist in our various activities. Such donations are valuable in enabling us to achieve our objectives. I would like to suggest that the names of donors are published in the Bulletin as a token of our appreciation.

Our relations with the National Museums of Kenya remained cordial and on behalf of the Society, I would like to thank the Museums' Director/Chief Executive Dr. Mohamed Isahakia for allowing us the use of Lecture Halls and other facilities. Ladies and Gentlemen, may I conclude my remarks by thanking the following members who have assisted me in the running of the Society's affairs throughout 1989:

Mrs Fleur Ng'weno, the outgoing Vice-Chairman, who steered several Executive Committee meetings in my absence. Mrs. Peris Njuguna for publicity work which helped the membership drive. Dr. Clive Lovatt for many hours spent on the Society's Accounts. Mrs. Inga Ayers, Mrs. Daphne Backhurst, Mrs. Lise Campbell, Mrs. Judith Rudnai. Dr. and Mrs. B. Shadel, Mrs. H van Speybroek. Mrs.Ann Visagie and Mrs. Marjorie Watts for help in the office and to Pat Frere who presented the magnificent colour photographs which now hang in the office.

I would like to thank our auditors, Muchekehu & Co for auditing our accounts in time for the AGM, the co-opted members of the Executive Committee for their ready and willing help and all the members for your cooperation and support without which my job as Chairman would have been very difficult.

I am confident that with your support the Society will continue to grow to greater heights in fulfillment of its objectives under the guidance of the incoming Executive Committee.

Thank you.

TIGONI DAM - EFFECTS OF POLLUTION

INTRODUCTION

Tigoni Dam was constructed by the army during the Second World War (1939-1945) about 30 km north of Nairobi and 5 km south-east of Limuru (Fig. 1). It is a shallow man-made lake with a maximum depth of of 6 m located at an altitude of 2250 m above sea level. The dam is fed by the Ithanji River, a small stream which originates approximately 3 km upstream. It is drained by a stream of the same name which joins the Ruaraka River, one of the tributaries of the Nairobi-Athi system (Njuguna, 1978). The dam's water is a valuable resource utilized by the local community for domestic and agricultural purposes. The dam also provides recreational and subsistence fishing.

POLLUTION

Over the last few years, the dam has become progressively polluted by a complex mixture of industrial, agricultural and domestic effluents. Profuse algal blooms and oil streaks cover sheltered areas in a layer of about 10 cm thickness. The massive development of algae is an indication of gross pollution.

PRELIMINARY STUDIES

A preliminary limnological study was carried out by the author from 24 to 28 July 1990. The bloom-causing algae was identified as *Microcystis aeruginosa* L. The water had a very high content of plant nutrients, high alkalinity and very high levels of heavy metals. An assessment of the situation on the basis of historical data on water quality indicated that the water quality had changed considerably over a period of 25 years.

Field measurements of water temperature, pH, conductivity, dissolved oxygen and transparency were made. Samples of water and biological specimens were collected for chemical and biological analyses at the National Museums of Kenya, the University of Nairobi and the Government Chemist. Heavy metals were analysed by the X-ray Fluorescence Technique at the centre of Nuclear Science Techniques based at the University of Nairobi.

RESULTS

Physical and chemical conditions of Tigoni Dam water are summarised in Table 1. Conductivity and pH measurements made 25 years ago by Lind (1965) are also reported.

The results of the chemical analyses show high levels of plant nutrients (potassium and phosphorus) and heavy metals (chromium, iron, zinc, copper and lead) implicating agricultural, domestic and industrial sources of pollution.

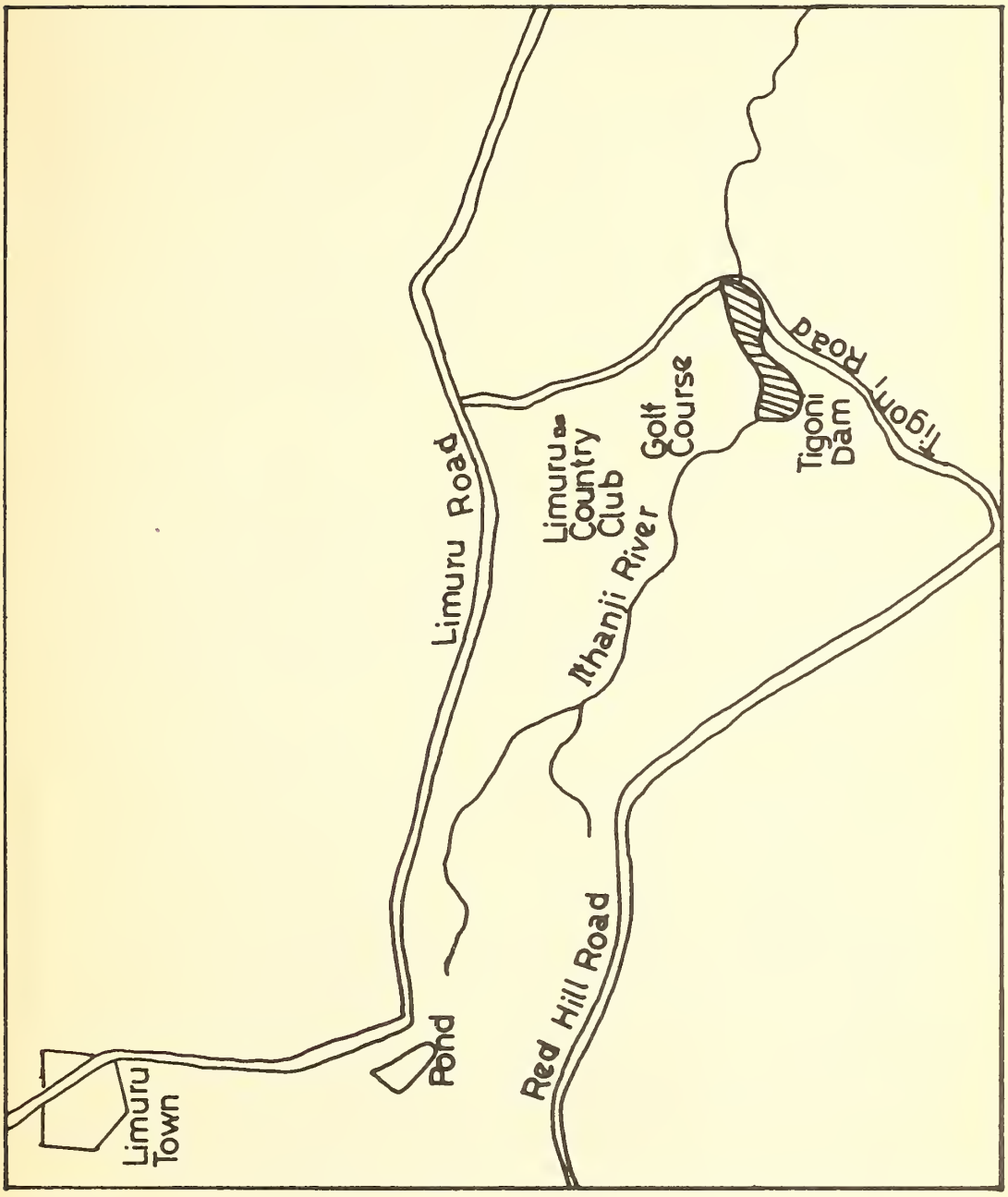

Fig. 1. Tigoni Dam

TABLE 1

Parameter	Concentration/level	
	July 1990	1965
Ph (standard 1-14 units)	8.1-8.3	7.0-7.3
Conductivity (uS.cm -1)	650-660	55-155
Water temperature (°C)	18-21	-
Colour (Hazen units)	5	-
Turbitity (J.T.U.'s)	15	-
Alkalinity (ppm $CaCO_3$)	80.0	-
Total dissolved solids (ppm)	283.0	-
Dissolved Oxygen (ppm)	9.6	-
Sodium (ppm)	83.0	-
Calcium (ppm)	14.5	-
Potassium (ppm)	30.0	-
Magnesium (ppm)	5.3	-
Silica (ppm)	30.0	-
Phosphorus (ppm)	3.0	-
Chromium (ppb)	27.0	-
Manganese (ppb)	35.0	-
Iron (ppb)	666.4	-
Nickel (ppb)	10.7	-
Copper (ppb)	19.2	-
Zinc (ppb)	94.8	-
Lead (ppb)	120.0	
Arsenic (ppb)	17.0	

Microscopic observations of the water sample showed an almost unialgal bloom of the colonial blue-green algae *Microcystis aeruginosa* L. Blooms of *M. aeruginosa* have been reported to produce toxins which cause livestock, wildlife, fish and waterfowl deaths (Carmichael, 1985). Although acute lethal toxicity to humans has not yet been reported, evidence is accumulating that the toxins cause gastroenteritis, nausea, vomiting, stomach cramps and skin irritation that is frequently severe in users of the contaminated water (Billings, 1981).

Tigoni Dam shoreline vegetation is dominated by the emergent macrophytes *Typha* sp. *Cyperus* sp. and *Polygonum* sp. The crustacean *Procambarus clarkii* and the fish *Tilapia* sp. provide recreational and subsistence fishing. A few species of waterfowl such as ducks, cormorants and kingfishers are frequent visitors to the man-made lake.

A horticultural farm along the southern shore of the dam is the likely source of agricultural runoff rich in plant nutrients such as potassium, nitrogen and phosphorus. Domestic input is likely to originate from Limuru Town along with industrial effluents from two factories in Limuru Town, namely, the Bata Shoe Factory and Nile Investments Plastic Industry.

RECOMMENDATIONS

On the basis of these preliminary findings. It is recommended that the relevant Government Authority should intervene to stop the implicated sources from discharging untreated wastes into the ddam.

Further comprehensive studies should be conducted to ascertain the levels and the effects of the pollutants. A regular monitoring programme on the limnological characteristics of the dam should be planned. Finally the dam water should be treated to render it potable.

ACKNOWLEDGEMENTS

This study was funded by the East African Wildlife Society.

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LIZARD BUZZARD FEEDING ON *HEMIDACTYLUS* GECKOS

The Lizard Buzzard *Kaupifalco monogrammicus* is a resident of woodland, thornbush and cultivated land in much of Africa south of the Sahara. It is known to feed on molluscs, insects, arachnids, some frogs, lizards, snakes and small mammals (Brown, Urban & Newman, 1982). No detailed studies appear to have been made on its feeding in eastern Africa, but work done on the Ivory Coast (Thiollay, 1975-1978, cited in Brown et al., 1982), showed that most prey of the Lizard Buzzard is captured in tall dense cover, mainly grass, and is caught by a quick swoop to the ground rather than in flight.

The Lizard Buzzard is recorded as "scarce" in the Dar es Salaam area (Harvey & Howell, 1987), but is a resident breeder, and when breeding, is noticeably vocal. The following observations were made between March 1988 and August 1990 at Kimara, a residential area 15 km west of the city centre of Dar es Salaam. The natural vegetation of the area formerly consisted of woodland and coastal scrub, but this has now been extensively modified by clearing and cultivation as well as by construction of numerous residential dwellings.

Observations were made between 05.30 and 07.00 hrs. from the immediate area of my dwelling. Lizard Buzzards called from trees nearby. Detailed records of the frequency and intensity of calls were not kept, but the following details on feeding behaviour were recorded:

> 13 March 1988, 05.45 hrs: Two Lizard Buzzards were seen perched 3 m from each other and calling from *Cassia* trees about 10 m from the observer, who was inside the house. The birds were about 5 m above ground level. One bird made a swoop directly towards a *Hemidactylus* gecko which was on the exterior wall of the house. The gecko was seized from the surface of the wall in the talons of the bird, which flew back to its original perch and consumed its prey. No reaction to this behaviour was noticed in the other bird.
>
> 16 May 1989, 0613 hrs: A single bird was seen to capture a gecko in a manner similar to that described above.
>
> 10 August 1988, 05.50 hrs and 20 July 1990, 06.20 hrs: a single Lizard Buzzard attempted to capture geckos from the wall, but failed in both attempts.

Two *Hemidactylus* geckos occur in buildings in the Dar es Salaam area: *Hemidactylus mabouia* (Moreau de Jonnes, 1818), the Tropical House Gecko, and *H. platycephalus* Peter, 1854, the Baobab Gecko. It was not possible to identify the geckos involved here to species level; the observations may involve either one or both of these. Although *Hemidactylus* geckos are often regarded as nocturnal, Howell (1981) has shown that they are active in conditions of low light generally, such as at dawn and dusk, as well as at night. In the period just before and after dawn, I have regularly observed mosquitoes flying into crevices under the eaves and landing on the wire mosquito mesh on the windows in an apparent effort to enter the darkness of the house. Large numbers of geckos actively feed on mosquitoes and other insects on the exterior of the walls and on the wire mesh at this time.

These observations are of interest in that there are few details available on the reptilian prey of the Lizard Buzzard in eastern Africa, and they raise other questions. At least in the Dar es Salaam area, two other species of diurnal geckos occur and

might represent potential prey items for the Lizard Buzzard, the Green Day Gecko *Phelsuma dubia*, about 125 mm total length, and the much smaller *Lygodactylus luteopicutratus*, about 75 mm in total length. The role of these geckos as well as other reptiles in the diet of the Lizard Buzzard remains unknown.

While the Lizard Buzzard takes a wide variety of prey items, just how many of these are related to the presence of man and his direct modifications of the environment is not clear. Unlike some other birds of prey which live in close association with man, such as the Black Kite *Milvus migrans*, the Lizard Buzzard does not feed regularly on young chickens and ducklings. Certainly it would appear that some birds have been able to benefit from the presence of the geckos, themselves closely associated with man, under conditions in which the highly cryptic prey are relatively visible and from which attempts to capture them are unhindered by dense vegetation.

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BIG SHORE BIRDS FEASTING ON TILAPIA AT A BROOK IN LAKE NAKURU NATIONAL PARK

The Lake Nakuru National Park visitor's attention was drawn to a large gathering of shore birds near the mouth of a brook at Hippo Point 2 at about 11.00 hrs on 18 February, 1990. Massive numbers of the small fish *Sarotherodon alcalicus grahami* (= *Tilapia grahami*, Schwan 1986), swimming up and down in the clear water of the brook, which was 10 - 30 cm in depth and only 0.5 -1.5 m in width, had attracted the birds to gather for fishing. A few minutes after the tourists had left the shore, approximately 350 White and Pink-backed Pelicans *Pelecanus onocrotalus* and *P. rufescens*, 70 Marabou Storks *Leptoptilos crumeniferus*, 30 Yellow-billed Storks *Ibis ibis*, 25 Cattle Egrets *Egretta garzetta*, (busily picking up tilapia) formed a densely packed multi-species flock along the brook for a distance of 150 metres. Some smaller waders, passerines, Defassa Waterbuck and Warthogs also came to the spot probably out of curiousity to see what was happening. The fishing feast of the birds lasted for at least half an hour until a new group of tourists walked into the area.

To elucidate the food items of the birds, 20 fish specimens were collected and measured. The following results were obtained:

	Weight	Body length	Maximum body height (dorsal-ventral)
	g	mm	mm
Total range	0.47—1.90	29—50	8—12
Total mean	0.73	35.8	8.6

Fyer & Iles (1972) reported that *T. grahami* is the smallest species of the genus seldom exceeding a length of 6 cm and that the females attain their maturity and breed when only 2.5 cm in length. (cf. McInerny 1966).

The dissection and microscopic study of the Nakuru brook fish sample did not reveal any mature eggs or sperm to spawn.

The *Tilapia* species concerned, the identification of which was confirmed by Mr Duff-MacKay of the Nairobi National Museum, tolerates high alkalinity, low oxygen content and high temperature of water (Fryer & Iles 1972). The species was introduced to Lake Nakuru in the early 1960's from Lake Magadi (Vareschi 1979, Vareschi & Jacobs 1984) and serves as food "for an abundant and diverse community of fish eating birds" (Schwan 1986 p.199, Vareschi & Vareschi 1984).

Because *S. alcalicus grahami* can breathe atmospheric oxygen (surface breath, Schwan 1986) and flourishes in clear water at the margin of the lake and lagoons,it is possible that the recent relatively high level of the water in Lake Nakuru has opened ways for the fish to swim up the brooks and exploit the higher oxygen content. By doing this, the fish were exposed to predators and hence the gathering of the shore birds (cf. e.g. Vareschi & Jacobs 1985).

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THE BARREN FIG AND MORE FRUITFUL ONES

When Miriti wrote out for me the Meru account of the origins of the mukuyu (*EANHS Bulletin* Vol.20 (3) September 1990) he, an ingenuously devout young Catholic, prefaced it with a biblical story. He related the story of Jesus and the barren fig; how upon finding a fruitless fig tree, the hungry prophet cursed it so that, as St. Matthew said "presently the fig tree withered away" and he swore to it, according to St. Mark, that "no man eat of the fruit of thee hereafter for ever". The disciples recounted the episode not as evidence of Jesus' human frailty but of his divine powers, an example, as Jesus himself said at the time (as an excuse for his petulance?) of the power of faith. Miriti in turn recounted the story as he had been taught by his priest, to show that the taboo on eating the fruit of the mukuyu was not only Meru (and Kikuyu) tradition but had biblical sanction as well. Local Muslims find similar sanctions for their pagan beliefs. Another neighbour is a Boran, a tribe that has only recently, partially converted to Islam. He says his people call the mukuyu "anda" and they do not cut it or eat of the fruit, because the Prophet Mahomed said it was "cafili" = cursed.

The identification of the mukuyu with the biblical fig is botanically sound. Of all the local species, it is the mukuyu *Ficus vallis-chaudae* which most closely resembles *F. carica*, a native of southwestern Asia (the best known variety is called Smyrna). If the *Bible* is to be believed (which much of it isn't since it was compiled so long after the fact), the fig was cultivated by a very early date. The author of *The First Book of Kings* wrote that the people of "Judah and Israel dwelt safely, every man under his vine and under his fig tree . . all the days of Solomon". Which were in the 10th century BC.

Although the leaf of the vallis fig tree is heart-shaped, not tri-lobed, and has a smoother surface, it often has the same figgy fragrance, like new mown hay. This is especially noticeable when the leaf is dry, the branch I brought back initially to identify, perfumed the cottage for days. Like the cultivated fig the vallis fig grows out of the leaf-bearing branches and is much the same size and shape. It has, however, a thicker skin, and instead of becoming squishily purple (or a very soft green), it ripens to a firmer reddish-yellow and is insipid compared to the succulent Smyrna. (*F. carica* is so full of sugar that when it is dried, in an oven or by the sun, it is like chewy candy; *carica* is the Latin for a kind of dried fig. Why the word should be used for the genus to which the papaya belongs bemuses me, unless it refers to that fruit's slightly figgish shape.)

Devout Christians though they may otherwise be, most followers of Jesus seem to have completely ignored His ban on eating the fruit. It is relished all around the Mediterranean by everyone, Christians as well as Muslims. *F. carica* was introduced onto the East African coast by Arabs. Fortunately it is not here called the mukuyu, which would make it - for the Meru at least - forbidden fruit, but is called mtini. The word could be the Kiswahili locative form of "tree" (mti + ni) but in this specific case it is not. It is the Arabic word for fig, *tin*, with the Bantu tree-class *m-* prefix and the *-i* ending that the Swahili tack on to most foreign nouns to make them their own - - - *vide* shirti and socksi and sheeti! One finds mtini in gardens all over Kenya now, for like all figs it is easily propagated by cuttings and can also be deftly grafted onto indigenous stock.

It is convenient that figs can be so propagated, for they have a restricted reproductive system. Each species of fig - - and there are some 900 in the world - - is dependant on its own species of "fig insect" to pollinate its flowers. What flowers? Where??? I asked Miriti, who had to ask his father, and some other old men. The Meru

say that fig trees flower at night, which is why no one sees them. They are right in a sense. No one sees the figs flower. Fig trees have strangely secretive floral arrangements. The tiny blossoms grow inwards in a hollow receptacle, a globular expansion of a twig. This is the fig. But even with such an introverted existence, fig flowers manage a satisfactory sex life - - if the right cupid flies in. Each receptacle is formed with a small opening at the distal end, and through this ostiole the minute "fig insect" enters, attracted to her own fig species by its particular scent. The "fig insects" are a family of chalcid wasps that has been named Agaonidae, meaning "beloved". Who says scientists have no sense of romance - or humour? (Or my beloved. When I was bemoaning my inability to key out the fig species here, he suggested I simply catch their wasps and identify them.)

The tiny female lays her eggs inside the flowering fig. The larvae hatch out and pupate *in situ*. The males and females mate. The males bore their way out (and soon die), the gravid females follow, collecting pollen as they exit which they then dust on the blossoms in the fig which they enter to lay the next generation of fig cupids. (I cannot resist carrying the entomological story just one parenthetical sentence further: there are certain parasitic wasps who insert their immensely long ovipositors through the ostiole and deposit *their* eggs on the agaenid wasp larvae pupating inside the fig.)

When all the little wasps have flown the nest, the atmosphere inside the fig gets back to normal, and the curiously introverted flowers get on with their own business of becoming more or less succulent fruits. The larger ones are called *nku* by the Meru, *kuyu* by the Swahili and Kikuyu. (The Kikuyu take their name not directly from the fruit, but from an eponymous ancestor who was called Gikuyu, "little fig".) The word *kuyu* can refer to several of the obviously similar fig fruits. (I suspect the word may be a permanently contracted form of *buyu*, the fruit of the calabash gourd and also of the "calabash tree", the baobab, based on the similar pear-shaped forms of the fruits. My linguistic suspicion was virtually confirmed when Miriti told me that the Kikuyu call a certain kind of sheep *mukuyu* and that this kind of sheep is characterised by a long neck and a penduluos dewlap.) The m - prefix simply turns the fruit into its tree.

There are mukuyus of several species growing over much of Kenya (there is even a town called Makuyu, near Thika, that grew up round a venerable fig tree and its spring - and the original Treetops was a tree-house built in 1932 in the fork of a huge fig tree near Nyeri, that overlooked its own spring). All mukuyus are sacrosanct, for they all contain latex and all are associated with water. But for the Meru, some are less sacrosanct than others. The tale of the murdered wife and the ban on eating the fruit of the tree that grew from her grave concerns only the vallis fig. The other mukuyus they call murirus, and they eat of their fruit. There is no danger of anyone making a mistake, for although the fruit look similar, they grow very differently.

We have many murirus here. Farther down, our spring-started rivulet joins the Ngare Ndare. For a stretch of nearly a mile, before it drops off over the edge of the escarpment, the river's banks are lined with magnificent sycamore figs. Their huge spreading branches hang over the rock-splashing water and their great gnarled roots hold the banks together even when the river becomes, in the rainy season, a briefly raging torrent. Their bark has a yellowish tinge, as if reflecting their age; some of the trees look as though they must be centuries old. This wide-spreading species, *F. sycomorus*, is very widespread, and references to it are very old. The author of *Kings I* gives the example "as the sycomore trees . . . for abundance".

Although the sycomore's heart-shaped leaves are simply a smaller, rather scratchy version of those of the vallis species, the figs appear very differently. They hang in huge grape-like clusters, on many-branched leafless stems that grow out of

the big old boughs. The clustered fruit is why the tree is called a "mulberry-fig", the literal meaning of sycomore. (*Sykon* literally "juicy" is the Greek for "fig"; *moron* that for "black mulberry" and the two genera are cousins in the same botanical family. Why the maple tree of Britain and the American plane tree are also popularly called sycomore is a nominal mystery; neither has anything to do with figs or with mulberries.) During the fruiting season (which can be almost any time of year, for individual trees stagger their flowering so that the pollinating wasps can always find a ready fig) the sycomores are a gay sight, for the figs that start out grey-green and furry, ripen via a yellow and balding orange to a smooth bright red.

There are also some cape figs (they used to be called *F. capensis*, now they have been renamed *F. sur*) scattered along the river's banks. They have a distinctively jagged large elliptical leaves but sycomore-like bunches of shiny, rather stripey red fruit. The bark of the murirus is fragrant, especially when burned. Although the traditional prohibition on cutting mukuyus applies to these muriru mukuyus, the weed is used for the ritual fires that are lit when youngsters are being circumcised, for the fragrance is said to dispel the "bad smell", the odour of pain and fear. Old people also use the smoke as a perfume, to counteract the unpleasant smell of castor-bean oil and animal fat that they use as skin conditioners - - just as Europeans use lanolin-based creams.

The local children all swarm up the easily climbed trees to strip the muriru stems bare. (It is providential, not simply coincidental, that the permitted muriru fruits are sweeter and tastier than those of the forbidden mukuyus.) I sympathise with the children. One of my most pleasant childhood memories is of a sunny autumn on the family farm in Italy. My grandparents had provided for me such a perfect white pony that I could stand tiptoe in the saddle to reach the topmost figs. Dora never budged. I must have eaten vast quantities, for I was rebuked by my severely fair grandmother. She pointed out that if I ate all the fruit, the poor peasant children would automatically get the blame.

Here too I ride around from fig tree to fig tree, but I am not tempted to take much of the fruit. Being spoiled by the luscious *F. caries* I find these wild figs at best make passable jam. So I leave the murirus for the Meru children — and the Meru children, obeying both Meru tradition and a biblical injunction two thousand years old and ignored by the rest of the Christian world, leave the mukuyus for the monkeys and the birds.

Cynthia Salvadori with Miriti s/o Rintary, Box 4[illegible]7, Nanyuki.

BIRD WATCHING AT THE NEW KAKAMEGA NATIONAL RESERVE

The Kakamega National Reserve, comprising about 36 km² at the northern end of Kakamega Forest, was gazetted in 1985. Since then it has received few visitors, most people going instead to the well known guest house run by the Forestry Department. This is unfortunate, since the reserve is better protected, has a greater habitat diversity, and is more easily accessible to people without their own vehicle. Until recently, one obstacle to visiting the reserve was lack of accommodation. There are now, however, a camp site and four simply-furnished visitor's bandas, the construction of which was funded by the University of California Research Expeditions Program.

These are located near the reserve headquarters, in a pretty site at the edge of forest and surrounded by Acacias. Clean water is readily available either from the rain tank at reserve headquarters or from a borehole at the nearby primary school. Currently there are no entrance or camping fees for the Kakamega National Reserve.

The northern boundary of the Kakamega Forest also marks the reserve's boundary. To the east and south, the reserve boundary runs half a kilometer east and south of the Isiukhu River, while on the west its border extends to near Shikusa. The reserve also includes Kisere Forest, a small 484 ha forest just to the northwest, near Kambiri Village. Kisere Forest is home for a recently discovered population of DeBrazza Monkey, a very rare species in Kenya. The reserve has a number of glades at its northern end, separated by strips of riverine forest. These glades vary in size, the density of trees and bushes and types of grass, which results in a greater overall diversity of habitats than found at the Forest Station. This, in turn, leads to a difference in numbers of some bird species between the ends of the forest, though this has not yet been well documented.

The reserve is easy to reach. From Kakamega, continue north on the main highway to Webuye for 16 km until reaching a sign post for the Kakamega National Reserve on the right (if taking public transport, ask for Kambi ya Mwanza which is about 400 m further north). Be sure to take the first right turn onto a murram road; the second turn, some 50 m beyond, leads to Kambiri village and Kisere Forest. Continue down the road for about 1 km passing through a section of forest, until reaching a junction (sign posted "Buyangu Hill"). The track straight ahead goes to Buyangu Hill (see below), but visitors should first turn left along the better worn track to get to the reserve headquarters, which is the first set of buildings on the right.

For potential visitors to the reserve, I wish to describe some of its highlights, particularly for finding birds. I will start with the area around the reserve headquarters, since this is where most people start after checking in with the warden. If desired, park rangers are available for guidance. The reserve warden also has copies of a checklist of birds of Kakamega Forest and a small educational display is planned.

RESERVE HEADQUARTERS AND VISITOR'S CAMP. A quick look around the ranger's camp will quickly turn up pied wagtails, grey-headed sparrows, several estrildids, sunbirds and black and white casqued hornbills; black flycatchers, plain-backed and Richard's pipits are occasionally seen here as well. The trail to the campsite passes through a strip of forest which often contains great blue turacos, red-chested cuckoos, crowned hornbills and numbers of common wattle eyes. The glade outside the campsite is frequently cut for thatching grass and is not especially productive except for yellow-mantled widowbirds, fan-tailed warblers and longclaws. The campsite is good for barbets, cuckoo shrikes, Mackinnon's shrike and also baboons.

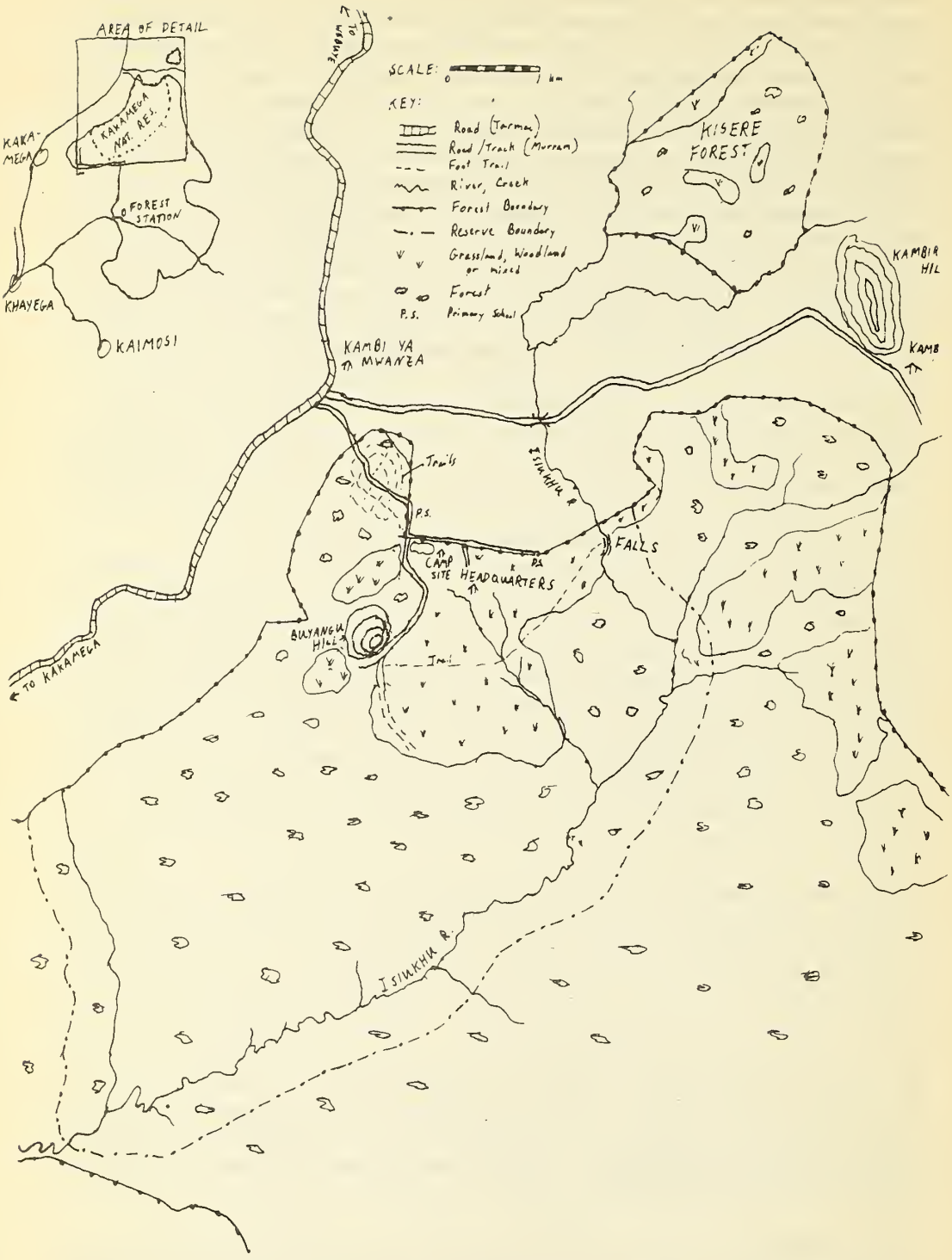
Another area well worth exploring is a stretch of dense bush and thickets just south of the ranger's camp, along a small creek. The dead trees in this area often turn up raptors (long-crested eagles, banded snake eagles, great sparrowhawk), hornbills (mostly black and white casqued, but also ground), Ross's and great blue turacos, crowned cranes, red-eyed doves, swallows and sometimes hundreds of migrating white storks. Green pigeons and various bee-eaters are sometimes here as well. A morning visit to the thickets along the east edge of the creek can be very productive, turning up mousebirds, tinkerbirds, many weavers, sunbirds, estrildids, warblers, Chubb's cisticola, robin chats, wattle-eyes, blue flycatchers, grey-green bush shrikes, pygmy kingfishers, honeyguides and so on.

BUYANGU HILL. The best place to go for a first time visitor is Buyangu Hill, not so much for the birds as for the view. This old murram quarry is reached by heading back on the road one took in and turning right at the signpost for Buyangu Hill. This road first passes some glades (where, at dawn, I have twice seen serval) before entering secondary growth forest. Here the canopy is sufficiently low that tree top birds such as greenbuls and warblers, including Turner's Eremomela, can be seen more easily. This is also a good place to spot guinea fowl and wood doves. The road then passes a small pond (formed when the road dammed a stream) on the right. In addition to being home for several terrapins, this pond attracts hadadas, hamerkop, migrant waders, the occasional grey heron and mountain wagtail. At night the grassy edges are filled with several species of *Hyperolius* tree frogs calling for mates, while at midday the drainage culvert attracts a spectacular concentration of butterflies. Continuing on down the road, one reaches a small footpath branching off to the right, which goes to the top of the hill. Alternatively, one can continue straight on until the road passes in front of the bare, eroded face of Buyangu Hill. In with the ever abundant white-headed roughwings, one can sometimes spot the glossier, longer-tailed black roughwings as well as horus swifts. Also seasonally present here are numbers of little bee-eaters which apparently nest in the banks of the ravines along with the roughwings. Continuing past the face of the hill leads to a trail to the top. This small climb is well worth it, as it affords a wonderful view of most of the reserve, with its mix of forest and grasslands, and the Nandi escarpment.

Instead of going to the hill, one can also take a wide track forking off to the left just before the hill. This track (which is planned to continue down to the Isiukhu river) goes down into one of the larger glades. The bushy patches just as this glade opens up is a particularly good place to look for Mackinnon's shrike (which is otherwise easier to find at the Forest Station) as well as whistling cisticolas. Stout cisticolas, yellow-throated longclaws, weavers, mannikins, canaries and yellow-mantled widowbirds are common in this glade. Some swampy patches are good for marsh widowbirds, blue-headed coucals, marsh tchagras, red-faced cisticolas, sunbirds, weavers (including spectacled and grosbeak) and, less frequently, black bishop and harlequin quail. A visit at dawn or dusk will turn up white-tailed nightjars and possibly a cape grass owl.

ISIUKHU FALLS. These small falls and rapids are on the Isiukhu river, near the northern edge of the forest. The best way to find them is to start at a small trail leading off to the left just after turning left down the track into the above glade (hopefully signposts will eventually be made to mark these trails). This trail first passes through secondary growth woodland/forest, before reaching some broad flat rocks crossed by a small creek. These rocks are a good place to find lizards, particularly five-lined skinks, while the creek may turn up freshwater crabs and *Xenopus* clawed frogs. This area, and the edges of the glades just beyond are a good locality for Ross's turacos. The trail passes some more glades (widowbirds, fan-tailed warblers, prinias) and woodlands (some of which seem particularly good for orchids) until it reaches the river. The rocks above and below the falls should be examined for mountain wagtail, hamerkop, herons (including green-backed) as well as monitor lizards, while African black duck and giant kingfisher may also be possible.

FOREST TRAILS. The portion of forest that is along either side of the road into the reserve has recently been cut with a series of trails. Although the trails are arranged in a confusing manner, it is not really possible to get lost since they do not continue deep into the forest. This is really the only area currently available at Buyangu for the



Kakamega Forest Reserve

study of forest birds and monkeys, but the birding here seems as good as at the Forest Station, though the high canopy sometimes makes it difficult. As at the Forest Station, patience is necessary because the forest may seem very quiet until one encounters a large mixed species flock of birds all around. The area covered by the trails here is less than at the forest station, but more trails are planned elsewhere in the reserve.

In addition to the areas I have just described, there are numerous other glades, easily accessible by walking along old cattle tracks, which are worth exploring if one has time. It is possible to see all the species of monkeys here that are found at the Forest Station, while bushy areas can turn up bush duikers and other elusive mammals. Outside the reserve, the surrounding shambas also turn up some interesting birds. Look for eastern grey plantain eaters, blue flycatchers, stonechats, indigobirds and possible African firefinches out near the main highway. Kakamega National Reserve is well worth visiting in addition to, or even instead of, going to the Forest Station.

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ELEPHANTS IN LIMURU

Just before dawn, on a morning in early September this year, a night watchman saw the dim shapes of two elephants moving quietly past the cattle sheds he was guarding. This might not have been a particularly unusual sight in some of the more remote parts of Kenya, but it was certainly an almost unique one in the closely settled farming area of Limuru, where wild animals of any kind are a rarity these days.

The two elephants moved on slowly across the Riara Ridge road (the old "B" route) and walked up the driveway of a local canning factory before turning across to the boundary fence of Mr Kingsford's farm. They pushed a small gap through this and proceeded quietly through his boysenberry plantation and patches of maize and vegetables, circled his grass tennis courts, leaving their footprints deeply embedded in the damp soil, but otherwise doing no damage whatsoever.

They were obviously not anxious or disturbed by their unusual surroundings, as they wandered slowly round the edge of Mabroukie Tea Estate, near the tea factory, before turning back towards the Uplands forest, from where they must have originally come. The forest is, in fact, only a few kilometres away, but the area between has been cleared, cultivated and closely settled for many years now.

Why did they come? From the size of their footprints, one elephant was a fully grown adult, the other probably a half grown animal. They had not come on a plundering expedition, for no signs of damaged or eaten crops were found, or reported, by local farmers. Indeed, the two elephants seem to have followed footpaths, roads and tracks through the tea plantations and maize fields.

It almost seems as though this was a trip down memory lane, with the older elephant showing his (or her) offspring some of the old country where their ancestors used to roam in days gone by.

I believe that this incident was actually reported to Dr Richard Leakey, whose reaction was that it might indicate that these particular elephants were perhaps beginning to feel freer from persecution and harassment and thus starting to become more confident again, even in the open.

Whatever the reasons may be, however, we local Limuru residents found the whole affair rather encouraging, reminding us that we are still living in Africa, even though we are now surrounded by the trappings of so-called civilisation.

I myself came to Limuru in 1925 as a boy and I remember very clearly the country as it was in those days. We used to see, and sometimes meet, the occasional lone buffalo (they used to join herds of cattle, and one chased two ladies up the sixth fairway of the old Brackenhurst golf-course). And there were plenty of leopard about, coughing round our houses at night. There were ant bears, porcupines, bushbuck and duiker too - but never an elephant, as far as I recall.

Perhaps other members of the Society would like to comment on this?

H.S. Morton, P.O. Box 1, Limuru.

I W R B - KENYA SECTION

Naivasha training workshop, 13-14 October 1990

INTRODUCTION

Naivasha, a freshwater lake in the Kenya Rift Valley, has been chosen as a priority site for the attention of IWRB-Kenya. This is for two main reasons. Firstly Naivasha is clearly a site of great importance for both resident and migratory waterfowl, particularly Palearctic duck. Secondly, during the past few decades the ecology of the lake has undergone rapid and dramatic changes. These can be attributed in part to substantial natural fluctuations in lake levels and to the introduction of various exotic plant and animal species, some of which have become pests. Additionally, the Naivasha ecosystem is under a variety of human pressures, including offtake of water for irrigation, pollution from agricultural inputs, clearance of papyrus swamp, chronic overfishing and changes in land and water flow in the catchment area.

The range and complexity of Naivasha's problems point to the need for a programme of long-term monitoring. In limnological terms the lake is already one of the best studied in Kenya. Waterfowl have been counted there in the past but only sporadically, a deficiency that IWRB-Kenya now hopes to remedy. The intention is to census the entire lake each year, using boats.

THE TRAINING WORKSHOP

In preparation for the first annual count in January 1991, the IWRB-Kenya section held a training workshop at Elsamere, Lake Naivasha on 13-14 October 1990. The nine participants were Leon Bennun, Cecilia Gichuki, Onesmus Kahindi, Nina Mudida, Fleur Ng'weno, David Okibiro, Damaris Rotich, James Wachira and Alison Wilson.

The main activities involved practice in counting and identifying waterfowl. Counts were made from two boats along the shoreline of the lake's south-western bay, from just north of Hippo Point to Goldsmith's Seeds (morning and afternoon of 13 October), and along the outer (western) shoreline of Crescent Island (morning of 14 October). In addition, a shore count was carried out along a 200 m section of Lake Oloidien (Holmberg Farm) in the afternoon of 13 October. The count sites are shown

on Figure 1. In the evening of 13 October we held a training session on identification with the aid of various field guides. During the counts, botanical specimens were collected by D. Okibiro.

RESULTS

The results of the counts are given in Table 1. The shoreline from Hippo Point to Goldsmith's Seeds was a mixture of rocky beach, often with tangled *Sesbania sesban* at the water's edge, and fringing papyrus. Patches of muddy shore also occured. Waterfowl were rather sparse in this stretch, although muddy patches held moderate concentrations of waders and duck.

The muddy shores and alkaline waters of Lake Olodien, with little fringing vegetation, held a good diversity of waterbirds in moderate numbers. Noticeable were numbers of Marsh Sandpiper, Whiskered Tern, Red-knobbed Coot and Yellow-billed Duck.

The shallow lagoon on the outer curve of Crescent Island was fringed in places with a narrow reef of papyrus. Mats of *Salvinia molestans* lined the shore, and formed a fringing barrier of variable width about 10 - 20 m further out. The lagoon itself was densely vegetated with submerged macrophytes (? *Potamogeton* sp.). Very large numbers of waterbirds were present in this section (Table 1). Notable species were Red-knobbed Coot, Saddle-billed Stork (including two juveniles) African Spoonbill and, on the northern shore, groups of Greater and Lesser Flamingo.

TABLE 1. Waterfowl counts on Lake Naivasha, 13-14 October 1990.
A: Shoreline from Hippo Point to Goldsmith's Seeds (9 km), 11.40-12.50 h and 14.30-15-30 h, 13 October 1990; B: Shore of Lake Oloidien (Holmberg Farm) (200 m), 16.00-1800 h, 13 October 1990; C: Western shoreline of Crescent Island (4 km), 07.40-10.15 h, 14 October 1990.

Species	Number			Remarks
	A	B	C	
Little Grebe	34	3	20	
Great Crested Grebe -	-	-	-	B: 1 outside count area
White Pelican	1	-	1	
Great Cormorant	17	-	46	
Long-tailed Cormorant	5	2	45	
Squacco Heron	2	-	2	
Cattle Egret	-	-	1	
Little Egret	1	13	1	
Great White Egret	-	2	1	
Purple Heron	6	-	1	
Grey Heron	-	-	8	
Hamerkop	-	2	-	
Yellow-billed Stork -	-	16	3	C: 2 juvs
Saddle-billed Stork -	-	-	3	C: 2 juvs
Glossy Ibis	-	-	8	
Hadada	2	-	6	

Species	Number A	B	C	Remarks
Sacred Ibis	18	-	25	
African Spoonbill	-	-	41	
Greater Flamingo	-	-	150	
Lesser Flamingo	-	-	50	
White-backed Duck	-	-	40	
Egyptian Goose	4	-	2	
Spur-winged Goose	-	-	1	
Yellow-billed Duck	15	20	67	
Red-billed Duck	17	10	33	
Hottentot Teal	9	7	5	
Garganey	-	2	20	
Southern Pochard	-	-	20	
Osprey	-	-	2	
African Fish Eagle	*	*	1	
European Marsh Harrier	-	-	1	C: female
Black Crake	33	-	3	
Purple Gallinule	-	-	1	
Common Moorhen	5	-	6	
Red-knobbed Coot	1000	150	15,250	
Jacana	3	-	26	
Ringed Plover	3	-	5	
Kittlitz's Sandplover	-	-	1	
Three-banded Plover	-	1	-	
Long-toed Plover	5	-	3	
Blacksmith Plover	6	2	11	
Spur-winged Plover	-	-	3	
Little Stint	4	2	-	
Curlew Sandpiper	-	1	-	
Ruff 5	5	2		
Black-tailed Godwit	-	-	1	
Bar-tailed Godwit	-	-	1	
Marsh Sandpiper	14	16	7	
Greenshank	-	3	2	
Wood Sandpiper	6	14	7	
Common Sandpiper	36	1	1	
Black-winged Stilt	4	4	14	
Avocet	-	2	5	
Grey-headed Gull	-	3	03	
Lesser Black-backed Gull	-	-	4	
Whiskered Tern	-	6	18	
White-winged Black Tern	4	3	-	
Gull-billed Tern	-	4	20	
Malachite Kingfisher	4	-	1	
Pied Kingfisher	4	5	15	
Giant Kingfisher	1	-	-	

* Not counted

ACKNOWLEDGEMENTS

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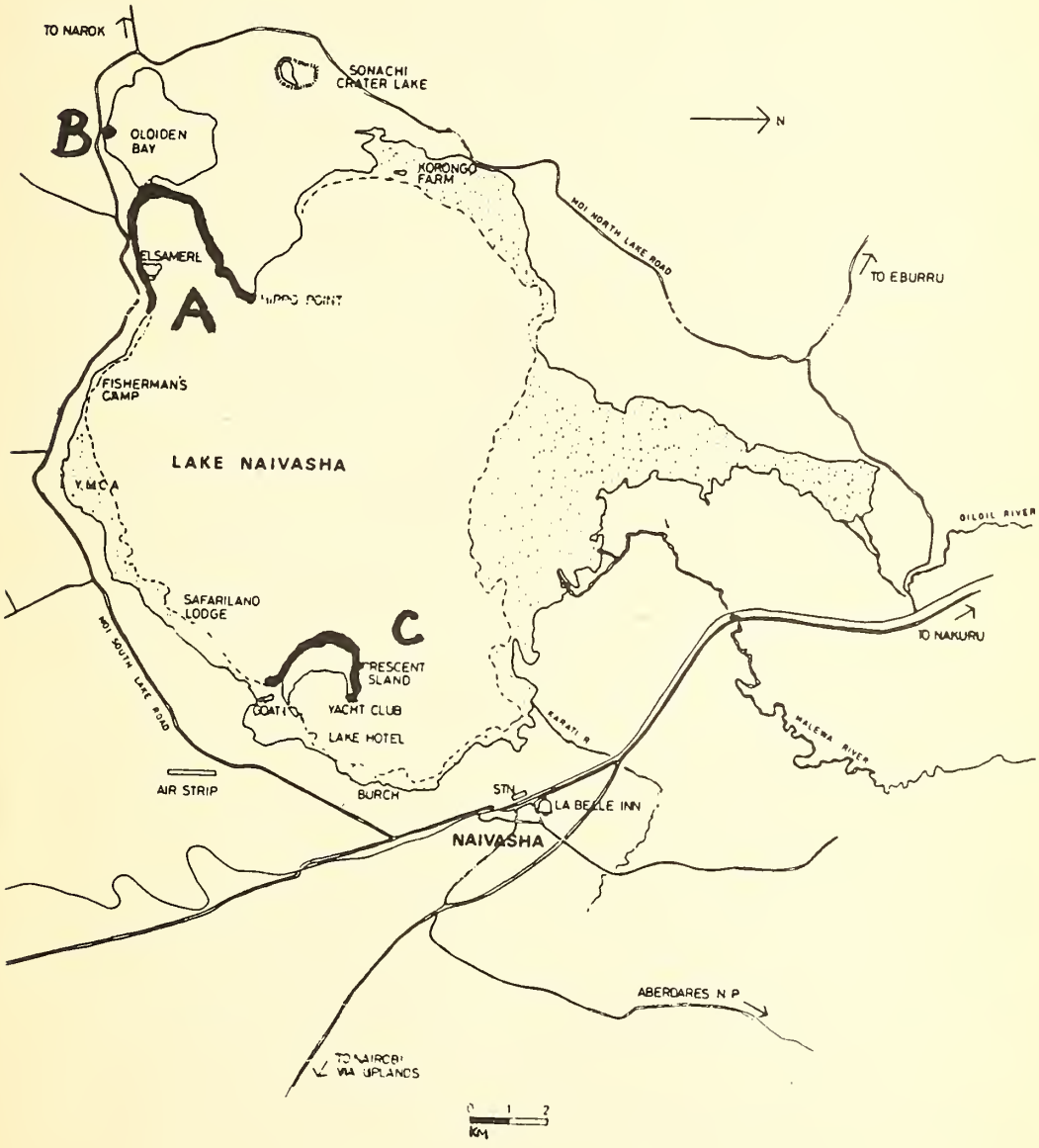

Lake Naivasha

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NOTES ON MKUSSU FOREST, WEST USAMBARA, TANZANIA

Mkussu forst covers a gently undulating ridge in the centre of the West Usambara mountains. The area visited was near Kifungilo mission (04°47' S 38°22'E) at an altitude of 1500 - 1700 metres. The forest is extensively disturbed *Syzygium guineese* subsp. *afromontanum* , *Newtonia buchananii* and *Podocarpus* have been cut for timber, and cattle and goats graze in grassy areas resulting from clearing.

Trees observed include: *Agauria salicifolia, Albizia adianthifolia, A. gummifera, Aningeria adolfi-friedericii, Apholia theiformis, Bersama abyssinica, Cassine aethiopica, Cassipourea malosana, Catha edulis, Celtis africana, Cleistanthus polystachyus, Cola greenwayi, Craibia brevicaudata, Croton dictyophlebodes, Cussonia spicata, Dasylepis integra, Diospyros natalense, Draceana steudneri, Drypetes gerrardii, Ekebergia capensis, Ficus kirkii, F. sansibarica, F. thonningii, Ficalhoa laurifolia, Garcinia volkensii, Leptonychia usambarensis, Maesa lanceolata, Manilkara discolor, Margaritaria discoidea* var. *fagifolia, Maytenus acuminata, Newtonia buchananii, Nuxia congesta, Ochna holstii, Olea capensis, Parinari exelsa, Phoenix reclinata, Podocarpus* sp., *Polyscias fulva, P.stuhlmannii, Psydrax parviflora* subsp. *rubrocostata, Rapanea melanophloeos, Rawsonia lucida, Ritchea albersii, Schrebera alata, Sorindeia madagascarensis, Strombosia schefflerii, Strychnos mitis, Syzygium guineense* subsp. *afromontanum, Trichocladus ellipticus, Vepris stolzii.*

The occurrence of species such as *Manilkara discolor, Margaritaria discoides* and *Schrebera alata* indicate that the forest is relatively dry, and is best classified as dry montane forest. These species have wide altitudinal ranges and can be found in a variety of vegetation types outside continuous forest. This presents something of a problem in classifying drier forms of montane forest, as they are a mixture of species of limited altitudinal range and those of wide altitudinal range.

I gratefully acknowledge funding from the World Wildlife Fund during the course of field work, and permission from the Tanzania Commission for Science and Technology to conduct research in Tanzania.

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NOTES ON SHAGAYU FOREST IN THE WEST USAMBARA MOUNTAINS

Shagayu Forest (ca. 4°30'S 38°18'E) is an extensive area of montane and upper montane forest in the north west Usambara at an altitude of over 1800 m peaking at 2218 m on Shagein. The canopy is 10-20 m tall on ridges and reaches 30-40 m in level valley bottoms. Only a small area at an altitude of between 1850 and 2010 m was visited on the western edge.

Trees observed included: *Agauria salicifolia, Albizia gummifera, Aphloia theiformis, Apodytes* sp. *Cassipourea malosana, Chrysophyllum gorungosanum, Cornus volkensii, Craibia brevicaudata, Croton dictyphloebodes, Dasylepis integra, Drypetes gerrardii, Entandrophragma excelsa, Ficalhoa laurifolia, Garcinia volkensii,* Gen.nov.aff. *Sideroxylon* sensu FTEA, *Hirtella megacarpa, Ilex mitis, Macaranga kilimandscharica, Mammea usambarensis, Maytenus*

acuminata, Nuxia congesta, Ochna holstii, Ocotea usambarensis, Olea capensis, Ouratea schusterii, Podocarpus latifolius, Polyscias fulva, Rapanea melanophloeos, Strombosia scheffleri, Strychnos mitis, Syzygium guineense subsp. *afromontanum, Syzygium scelerophyllum, Tabernaemontana* sp., *Trichocladus ellipticus, Vepris stolzii.*

Shrubs included: *Chassalia parvifolia, Dicranolepis usambarica, Gerrardina eylesiana, Lasianthus kilimandscharicus, Lasianthus kilimandscharicus* subsp. *laxinervis , Memecylon deminutum, Mostuea brunonsis, Pauridiantha paucinervis.*

Species of interest are the *Apodytes* species, a large tree with inrolled leaves also occurring in the Magamba and Baga forests. It is quite distinct from *Apodytes dimidiata* as I know it from the Uzungwa. Under our present knowledge I prefer to keep *Hirtella megacarpa* distinct from *Hirtella zanzibarica* with which it has been united. *Lasianthus kilimandscharica* subsp. *laxinervis* was growing sympatrically and flowering at the same time as typical *Lasianthus kilimandscharicus* which suggests that it may well be a distinct species.

I am grateful for support from the World Wildlife Fund during field work and permission to conduct research in Tanzania from the Tanzania Commission for Science and Technology.

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MO 63166-0299, U.S.A.

A NEW TREE FOR TANZANIA

Although the Luisenga stream in the southern Uzungwa mountains is well botanised (see *EANHS Bulletin* 19: 54-55) it is still capable of yielding some surprises. A Christmas break in Mufindi and a walk down Luisenga stream in beautiful weather with Johnny Niblett of Brooke Bond Tanzania produced *Schefflera umbellifera* (Sond.) Baill. (Araliaceae) a tree up to 15 m tall which was previously only known from Malawi south to the Cape. A stand of the trees grows where the Luisenga disappears underground. They were in profuse fruit and there was abundant regeneration. As this was my first sight of this species, I was struck by the superficial similarity to *Cussonia lukwangulensis* the Uluguru and Nguru endemic. It may well be that *S. umbellifera* is the parent of *C. lukwangulensis*, and I suppose that the latter ought to become a *Schefflera* if the combination has not already been made somewhere.

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ROOT TUBERS ON *KLEINIA LEPTOPHYLLA*

An account of the family Compositae for the *Flora of Tropical East Africa* has still to be published, but as part of the preparatory work several new names were published a few years ago (Jeffrey, 1987). One of these is *Kleinia leptophylla* C. Jeffrey, published as a new species from the Huri Hills, in northern Kenya. The original publication consists of little more than a Latin diagnosis and citation of the type specimen, but the species was described and illustrated in the following year by Halliday (1988). The species is also known from Mega Mountain, in Ethiopia, and Halliday reports that a plant collected in Saudi Arabia is also of this species, though the plant referred to had not been seen in flower.

In December 1987 I collected *Kleinia leptophylla* in the Huri Hills (Newton 3226, EA, K). I collected only cuttings, which rooted easily, and later I propagated the resulting plants by taking more cuttings. When I lifted the rooted cuttings I found that within a couple of months of rooting they had formed root tubers, up to 20 mm in diameter. These tubers continued to enlarge in the following year. In November 1990 I collected this species on Jibisa (Newton & Powys 3691, in hort.), with tubers of irregular lobed shape, the largest being 85 mm long. More plants of this species were found on Furrole (K. & A. Brown, in hort.), also with well developed tubers present in habitat. Tubers are not mentioned by either Jefrey (1987) or Halliday (1988).

Kleinia leptophylla is one of a small group of stem-succulent species with almost cylindrical leaves, occurring in Africa and the Arabian Peninsula. Within this group, the only other species in which tubers are reported is *K. picticaulis.* Mature flowering plants of *K. picticaulis* that I collected not far from the type locality (between Timau and Isiolo - Newton 3802, K) had small ovoid tubers, about 20 mm long and 15 mm wide, quite different from the larger and irregular shaped tubers of *K. leptophylla.* In common with most species in this group *K. picticaulis* has red flower heads, but the flowers of *Kleinia leptophylla* are a distiinctive and very attractive magenta colour.

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THE MIGHTY FIG

While perusing the arboreal bible, *Kenya Trees and Shrubs* in order to identify the Mukuyus (see *EANHS Bulletin* Vol.20 (4) December 1990) I came across Mugumus, more figs. In their description of *Ficus natalensis* Dale and Greenway write: "The Akikuyu hold the tree in reverence as the abode of ancestral spirits." I asked Kimutai, our Kipsigis factotum (Muthee was away, searching for an errant father), if there were any such sacred trees around. He promptly showed me one that had been lying under my nose all the time.

I'd noticed that a large tree had, a long time ago, fallen along the water where our spring begins to be rivulet, plashing shallowly over its bed of stones. Though prone, the tree is still very much alive, with new trunks growing up from the old horizontal one with thick foliage of smooth elliptical leaves. I had never given the tree a second thought except to wonder idly why it had never been chopped up for firewood or charcoal, but now I was fascinated, I couldn't believe it was a fig tree. But we found in the foliage a few tiny fruits with the tell-tale slit in the end.

They were stemless which meant that the tree was not the Natal fig but its close cousin *F. thonningii.* Kimutai told me that the Meru's ancestors, like those of the Kikuyu live in such trees; he said it was because they are full of milk. Sure enough, even a little nick in the barely rough brown bark leaked latex.

Kimutai was not overly respectful of the fallen tree, which he calls a *simotuet.* (Kipsigis ancestors do not inhabit fig trees, he informed me.) He stripped off a ribbon of bark from one of the branchlets to show me how useful it is as a natural twine, so strong that it is used for binding hut frames together. Further west, people are even less respectful of the tree. In

Uganda, the Congo and southernmost Sudan, the people - - more sophisticated than Adam and Eve who wore fig leaves straight from the tree - - rip wide belts of the bark from the trunk and from them beat bolts of barkcloth. It becomes a rich russet, as though stained with blood. (According to the tree books, *F. natalensis* and the Ugandans make the best barkcloth, but other people and other species, especially *F. thonningii*, make barkcloth as well.) The tree can survive drastic girdling - - up to 40 times if care is taken - - for the tree grows a new coat for itself from the underlying red threads, which are incipient aerial roots.

On the fallen *mugumu* one can see the matted network of red fibres in several places where the trunk has been gashed. There are tassels hanging from the exposed and now vertical base. The whole lower part of the half- horizontal half-vertical trunk is a tangled mass of roots growing upon roots. Eureka! I took Kimutai with me to see some trees growing on the spring-watered rocks and riverine beach of a small gorge near here. The trees were slimmer, the bark smoother and greyer, the branches slighter and more pendulous, but the aerial roots were unmistakable. I some places they have attached themselves to another part of the same tree so the tree is growing upon itself - - autophytic, one might say. In one place, aerial roots have joined two trees so they are growing together at one point, like sylvan Siamese twins. (After Fort Smith was built in 1892, it was practically besieged by the Kikuyu. But in 1897 peace was made, sealed when Chief Kinyanjui and Capt. Hall each planted a *mugumu* branch, which grew in unity as a symbol of the bond between Britain and the Kikuyu.) In other places the roots have latched on to other sorts of trees; one 5 metre root seems to be hauling a *lomoiyo* down like a hawser. On the cliff face the roots are attached to the rock itself, working their way along to creep into the spring-moistened cracks, imperceptibly but inevitably enlarging them. When I first saw the root covered wall, I felt as though I had come upon the remains of some ancient city. Kimutai confirmed that these too were the tree his people call *simotuet*, the one the locals, the Meru and Kikuyu, like the Swahili, call *mti mugumu*, the 'strong tree'.

The name could not be more apt. Many of the *mugumus* start out as epiphytes and end, inadvertantly, by strangling or starving their hosts to death. (The locals erroneously but understandably consider these figs to be parasites, subsisting off the very substance of their hosts.) Although the tiny figs are inedible according to human tastes, they are relished by many birds. When young, the trees can produce vast quantities of figs - - I found one *mugumu* with so many fruit on its slender branches that it looked like an enormously tall weedy coffee tree in berry. The birds devour the fruit *in situ* , then fly off and defecate the seeds in other sites, often on other trees where they happen to perch. There is a *mugumu* up on the forest ridge that started life in the fork of a tall cedar and is now encompassing the latter in its epiphytic grip. The fig's roots have crawled down the trunk to monopolise the nutriments of the soil and its crown now overshadows that of the cedar. In years hence no one will know that a cedar is embedded in the heartless heart of the mighty fig.

Since our prone *mugumu* was in no position to serve as an arboreal alter and the slim ones in the riverine grove were too young to be very venerable, Kimutai and I enquired after other mugumus in the area. We straight way got directions to more.

We rode across a patch of savannah behind the cottage, into an avenue of yellow acacias that line a dry stream. The avenue became a giant grove; several hectares of widely spaced acacias growing in a slight depression. Amongst them were two shorter, darker trees. Sure enough, *mugumus*, with aerial roots hanging down like frayed ropes. To my horror (it does not take me long to get into the spirit of things), I saw that several main trunks had been chopped off. It must have happened long ago, for the aerial roots had grown round the severed trunks as if to protect them. We heard the sound of chopping and pushed our way through the undergrowth of (mostly) hibiscus until we came to an elderly man dismembering a fallen acacia for charcoal. He pointed out two grey *mugumus* nearby. (The locals differentiate

the two varieties by calling the brown one exactly that, *Mugumu mutunune,* though botanists call them both *F. thonningii.*) and then he pointed to two more brown ones. One, he said, was the *Mti ya wazee*, the Tree of the elders. We rode up to it quietly, I with awe. It was right within sight of the main track. I had ridden past it dozens of times and never seen it.

The tree is heavy set, broad and low-branched, its short main trunk is wound round with rope-like coils of roots and more aerial roots hang down twixt heaven and earth. The smooth leaves are small and dark. One can virtually hear ancestors rustling in the dense evergreen foliage. The tree is a natural shelter from sun and storms and a refuge from wild beasts. One can easily see why people would gravitate to it.

It was here that the elderly people of the the area, the wazee, men and women of the age grade responsible for such things, would gather to pray in times of drought or, more rarely, epidemics or other communal disasters. The old women would come bringing gifts of millet gruel which they would sprinkle on the base of the tree whilst singing hymns to the great god Ngai, who resides on the snow-capped peaks of Mt. Kenya just as Zeus and his divine colleagues lived on Olympus. The old men would come separately, imploring the ancestors' intercession and Ngai's assistance by spitting libations of mead and sacrificing a ram. The ram has to be of a solid colour, be it white, brown or black, without spots or blemishes, one that is strong yet gentle, going willingly as a sacrifice. The wazee have to be unblemished too, free of deformities, illness or sores, and uncontaminated by sexual contact (they must spend the two nights prior to the ceremony sleeping as a group out in the forest, away from their wives). The wazee then gather at the tree and sacrifice the ram. They roast the flesh, and the vapours of the burnt offerings rise heavenward in the smoke. A small portion of the meat is set aside for Ngai, the wazee consume the rest - - just as the Jews of the Old Testament and all the ancient Aryans did. The wazee chant *huhuu huthui*, "help us holy one", over and over. They depart from the place still singing hymns - - and often, I have been assured, rain would fall even as they were leaving.

This area has just suffered a particularly bad drought. I asked if the Wazee had gathered here to pray for rain. No, said the old wood-cutter sanctimoniously, "people here are all Christians." This *mugumu* was last used in the early 1970s. But it transpired that then the wazee shifted to another *mugumu*, a mile or so forestwards on the farther side of the track - - in a site more secluded from the eyes of possibly disapproving Christians. Kimutai and I rode up to see it a few mornings later, asking directions as we wended our way along the narrow lanes in a patchwork of untidy shambas. The morning was bright and cool and the air was scented by the smoke that came curling out of the grass-thatched roofs.

Kimutai met a Kikuyu friend who lives at the top of the cosmopolitan little settlement, and he guided us to the edge of a great ravine. We looked down on the tops of a narrow forest of trees, and he pointed out various ones, amongst them a cape fig and a *mukuyu* and, particularly dark, the *mugumu* we were looking for, the "Mti ya Wazee". I left the horses with Kimutai and followed his friend down a winding path. Just as we entered the darkness we found ourselves in a traffic jam. A small boy was returning uphill with the sheep and cattle he had taken down to water. For the track led to a spring, issuing - - of course - - from the roots of a grand *mukuyu*. Except during the rains when it becomes a raging torrent, the 'river' consists of trickles that come from several springs.

We followed the trickle downstream for a few minutes, then my guide led me to an arboreal alcove on the bank. "Here", he said. I looked. Up. And Up. And Up. We were underneath a towering grey *mugumu* (or perhaps it was three; I could not decide what were trunks and what were roots). It was here that the wazee gathered to implore Ngai to end the drought in 1984. My guide showed me how the ritual fire would have been lit, with firesticks from the selfsame tree. The *mugumu* is such a special tree partly because, as he said, "it contains fire" - - the powdery decayed wood is highly flammable.

This year, however, the wazee gathered elsewhere. There is no shortage of *mugumus*, especially around Mt. Kenya. Some have given their name to places that are now on maps; there is a Mugomoinii in Muranga (Fort Hall) district, a Mugomene in Meru. Hundreds of sites are known locally by similar names. All of the *mugumus* are sacred, none should ever be cut. But for a *mugumu* to be used as a sacrificial tree, it should be close to water. (Kimutai says that his people also go to the forests to make their sacrifices, but in the Kipsigis case no special species of tree is sought, the only requirement is that there must be water, preferably a spring.). There is such a suitable tree near Timau. It was there that the wazee of this area gathered to end the last drought. The wazee did their job well. This area was blessed by exceptionally good rains in 1990.

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ANNOTATED CHECK- LIST OF THE BIRDS OF EAST AFRICA

By Lester L. Short, Jennifer F.M. Horne and Cecilia Muringo-Gichuki.

Proceedings of the Western Foundation of Vertebrate Zoology, Los Angeles, California. Volume 4 Number 3, June 1990. 246 pages, 24 photographs, 3 maps , 5 p. references. No index.

"The winds of change. This is a period of new learning about East African birds. Cast aside all the old books - *The African Handbook of Birds* (1955), the first three volumes of *Birds of Africa* and the several Field Guides. It is back to square one as these sweeping changes take hold of birdwatchers and Ornithologists".

This is how this publication struck me and how I reacted to it as I leafed through.

THE CHECK LIST

The list reports 1320 species recorded in East Africa, comprising Uganda, Kenya and Tanzania (including Zanzibar and Pemba) and adds 27 species to Britton's *Birds of East Africa* (1980). Annotations cover taxonomy and systematics, changes in scientific names, proposed English names, distribution and references.

This check-list must be taken seriously as it will evidently become the authoritative definitive work on East African birds - at least until somebody else produces another concept of what should be what.

Birdwatchers are unlikely to be interested in the taxonomic and systematic treatment, with remarks on superspecies, species, megasubspecies and subspecies (these not defined). However, it is a welcome change to see species in systematic order rather than the alphabetical order of Britton (1980). There appear to be some 40 changes in the scientific names; this is not entirely unexpected, but the literature supporting proposed changes is not generally available to the birdwatcher or ornithologist unless he has access to extensive library facilities. There will now be many changes in Britton (*op.cit.)* and even in *Birds of Africa* Vols. 1 - 3.

I will not go into this in detail, but will give a few examples. Before doing so I would like to quote Short *et al.* : "Avian systematics is in ferment, there will be shifts in the taxonomy of many taxa at all levels". There are vast changes from Sclater's *Systema Avium Aethiopicarum* (1924 and 1930), once regarded as the bible of African ornithologists, and from White's *Checklist of Ethiopian Birds* (1960 - 1965) and the two volume *Atlas of Speciation* {Passerines, Hall & Moreau (1970); Non-passerines, Snow (1978)}.

Short *et al.* state that they follow a new publication, *Reference List of the Birds of the World* by Bock & Gulledge and that they have also consulted with S. Keith, editor of *Birds of Africa* . However, they admit that they do not always concur with the findings of these other researchers.

A number of sub-families have been elevated to family status. For instance among the flycatchers (former Muscicapidae) we now have the new families Platysteiridae (batises, shrike-flycatchers and wattle-eyes) and Monarchidae (monarchs).

There has been much confusion over genera in the past. For example, the genus *Sheppardia* consisted of four species, all were known as akalats. It now includes the former Grey-winged Ground Robin, previously placed in *Cossypha* and then in *Dryocichloides* ; Bocage's and Usambara Ground Robin, previously in *Dryocichloides* , and the Iringa Ground Robin, which has previously changed from *Alethe* to *Dessonornis* to *Dryocichloides* ! Short *et al.*. point out that the taxon *Dryocichloides* (of Irwin & Clancy, 1974) cannot be recognised under the International Rules of Biological Nomenclature, since it is polyphylectic.

There are other examples, but in this conglomorate chaos what about English names? 'Ground Robin', 'Robin Chat', 'Akalat', 'Alethe', 'Cossypha', 'Scrub Robin', 'Forest Robin', how does one define these categories? Incidentally, 'Akalat' is the West African Bulu vernacular name for a small forest bird (see Bates 1930, *Handbook of the Birds of West Africa).* In Bates, 'Akalat' referred to the genus *Malacocinchla,* which became *Trichastoma* and more recently *Illadopsis* (a thrush-babbler). Now *Illadopsis* has been anglicised for a small group of birds while 'Akalat' refers to birds now in the genus *Sheppardia.*

A thrush is a thrush, or is it? I note with interest that we shall now have to divide our thrushes into two genera, *Turdus* and *Zoothera* . Americans and continentals have always followed this classification, but the staid British did not accept *Zoothera* which according to Gotch means 'alive I hunt or catch' (*zoos* [Greek] alive *thereo* [Greek] I hunt or catch), a reference to the diet of snails, worms and grubs for which they hunt on the ground. It seems to me that a thrush with spots on the wings is *Zoothera,* but without is *Turdus.*

ENGLISH NAMES

Probably the earliest comprehensive list of English names for African birds is that of Sclater's *Systema* , followed for eastern Africa by that of Mackworth-Praed & Grant's *Birds of Eastern and Northeastern Africa* . More recently, Britton's *Birds of East Africa* introduced several important changes. Short *et al.* now propose some 350 changes in names. It was Shakespeare who asked "what's in a name?; nevertheless I feel a few comments are called for.

Many species are today known from the anglicised version of their scientific name, usually of Greek or Latin derivation. The etymology is sometimes obscure but the older time ornithologists, whatever their natal tongue, were scholars well versed in Greek and Latin and proceeded to provide a scientific name, the generic being adopted for want of a suitable English name as far as the English speaking folk were concerned. Thus some 22 generic English names of Greek/Latin root are now used, including Alethe, Amadina, Apalis, Batis, Camaroptera, Cisticola, Colie, Cossypha, Eremomela, Hylia, Falcon, Francolin, Malimbe, Nicator, Pitta, Parisoma, Pytilia, Quelea, Sylvietta and Turaco (conversely, in 1909 one Haagner latinised an English name as Sheppardia !

The puff-back flycatchers are now Batises. The paradise flycatchers are now to be Monarchs (what will the editor think when I report that I had "two monarchs nesting in the garden"? Monarchs are Australasian and Pacific Ocean island birds. The 'bent beaks', Crombecs, are now Sylviettas. Pitta is recognised yet is a latinised version of Tulugu or Tamil (Dravidian languages, of Telingana, India) meaning 'a small bird' (Gotch).

Now to the proposed specific English names. We are talking of East African bird species so I do not see any reason to change a name just because the same name is applied to a bird in America or Australia. The harbinger of spring in the northern hemisphere, the Swallow, for example, once the Chimney Swallow or European Swallow or just Swallow, is now to become the Barn Swallow as in America; yet the same species is known in Australia as the Welcome Swallow.

It is interesting to note that the Records Committee of the British Ornithologists Union have made proposals for regularising European names for birds and for a standardisation of English names. (BOU 1988). The proposed changes involve 68 species recorded for eastern Africa. Now this is a tricky case for many British and Continental birds winter in Africa; will they be known in eastern Africa by the names suggested by Short *et al.* or those adopted by the BOU? Short *et al.* make no mention of the BOU recommendations.

In the order Charadriiformes we find the family Jacanidae. The Portuguese name Jacana is used for the name of these birds, probably by South American Indians. I quote, "it is inappropriate to use the group name alone as the English name as in Britton *(op. cit.)* and we use 'African' as a modifier" . . . What is wrong with the far more appropriate name 'Lilytrotter' with or without the modifier? To me these birds, irrespective of generic status will be Lilytrotters whether they be in South America, Africa or India. They must have floating vegetation upon which to trot!

Now for patronyms. Why Mrs Moreau's Warbler *Bathmocercus winifredae*, yet not Mrs Irene Morden's Owlet for *Otis ireniae*, which is now Sokoke Scops Owl despite the original proposal by Ripley who described the species. Similarly, *Nectarinia alinae* is Blue-headed, not Lady Jackson's Sunbird, but *Ploceus golandi* is Clarke's Weaver (named by his brother) and *Ploceus albineucha* is Maxwell's Black Weaver when the specific name translates to 'whiteneck'. We have the ultimate in *Apus berliozi bensoni* named after Professor Berliozi and Con Benson of Zambia and Malawi yet receiving the English name of Forbes-Watson's Swift ! There is just no consistency.

Short *et al.* now wish to impose some 350 new English names on East African birds. Is this really necessary? A few examples will suffice: Spotted Morning Thrush, was Morning Warbler, so called in Britton (1980), descriptive on account of its melodious warbling with no suggestion that it was a 'warbler' as such; but is it a 'thrush' closely related to those in the genera *Turdus* or *Zoothera* ? . The Sprosser, a palearctic migrant, now becomes Thrush-Nightingale. The White-crowned Shrike now becomes the White-rumped Helmetshrike. *Pycnonotus barbatus* has laboured under many different names; here Common Bulbul is suggested following Britton *(op. cit.)* but the British Ornithologists Union Records Committee propose Garden Bulbul. Amongst larks in the genus *Mirafra*, some are just 'larks', others 'bushlarks'. Of birds in the genus *Laniarius*, some are 'Bush-shrikes' others 'Boubous'. But what is a Boubou? I have been unable to find the origin of this name, which may be onomatopoeic.

Common Rock Thrush is proposed for Rock Thrush while the BOU Records Committee suggest Mountain Rock Thrush. The Reed Warbler *Acrocephalus scirpaceus* now has a modifier, Eurasian. *Aviceda cuculoides* was Cuckoo Falcon but is now Cuckoo-hawk while I note that *Falco ardosiaceus* is Gray Falcon, spelt with the American 'a' and not 'e'. I was amused to see Common Shrike-Flycatcher for *Bias flammulatus* when the annotation commences "Uncommon in forest. . . . "

I think this example of changes in English names should suffice to show the extent of revision required, but I cannot resist a dig at the mouthful required to provide an English name for some flycatchers for instance, *Elminia albonotata* is now White-tailed Crested-Monarch (-Flycatcher).

DISTRIBUTION

The authors give accounts of distribution which follow closely but simply and in reduced form those of Britton *(op. cit.)* and Lewis & Pomeroy's *Bird Atlas of Kenya* .

However, I find the frequent use of 'common' to be really ambigious, for this is not defined in any way and I cannot concur with the definition concerning many species which I know well. The word 'common' appears 60 times in the first 100 pages with or without a qualifier.

AVAILABILITY

I have had no notice as to when this work will be generally available nor what the price will be nor its distribution. I have no doubt however, that folk really interested in our East African birds will wish to obtain a copy. My one serious complaint is that no index is provided.

Wait for further shocks when Volume 1V of *Birds of Africa* appears and the Bock & Gulledge revision.

G.R. Cunnungham - van Someren

REFERENCE

British Ornithologists Union Records Committee 1988. Suggested changes to the English names of some Western Palaearctic birds. *Ibis* 130 (Supplement). *British Birds* 81: 355-377.

SPRING FLOWERS: *AMMOCHARIS TINNEANA*

Ammocharis tinneana is one of the most spectacular flowers that spring up with the first rains in the grasslands near Nairobi. The 1990-1991 dry season, which was long and particularly hot, was followed by a magnificent display of *Ammocharis tinneana* in early April.

On 24 March 1991, there was some rain on the southern edge of Nairobi. That night, frogs and toads started calling from ditches and pools. Just before the rain, a fire swept the bushy rocky grasslands near the Carnivore Restaurant on the hill between Wilson Airport and the Langata barracks. The combination of a hot dry season and a fire, burning off the grass, followed by good rains, ensures that the wildflower display will be at its best.

On 27 March, insects were hatching from the ground in clouds. Scores of migratory birds fluttered among the burnt shrubs of the Carnivore area grasslands, feeding on the insects. The Society's Wednesday morning birdwalk recorded Yellow Wagtails - - in brilliant yellow plumage, striking against the black ground - - Northern and Pied Wheatears, Winchat, Willow Warblers, Lesser Grey Shrike, Red-backed Shrike and several other migrants.

Then on 28 and 29 March it rained heavily. The rain soaked into the softened ground, filled the pools, ran off in muddy sheets and trickled from among the stones as clear brooks. One week later, on 4 and 5 April, pink and red masses of*Ammocharis tinneana* were splashed across the landscape.

Ammocharis tinneana grows from a large underground bulb. It produces a bunch of strap-shaped leaves with squared off tips, as if they had been snipped with shears. A thick flowering stalk pushes out of the ground beside the leaves. The big bud at the tip opens, and a bunch of long pink and white striped buds fan out.

The flowers open at dusk, like bouquets of lilies at the top of each stalk. Each flower has a long throat, and narrow petals that curl back like ribbons at the tip. As they open, the floers are pale shell pink or almost white. The next morning, the bees gather at the flowers, balancing on long thin stamen filaments, gathering the white polen onto their pollen baskets.

As the day lengthens the flowers darken, fading to pink. The next day the first flowers are a deep red or pink. One bulb may produce two flowering stalks, flowering one after the other, one a mass of pale pink, the other a mass of deep red.

On 5 April the burnt grasslands near the Carnivore had turned a vivid green on a background of black. The yellow stars of *Hypoxis obtusa*, also sprouting from underground, were opening their faces to the sun.. Huge puffs of pink and red *Ammocharis tinneana* dotted the hillside. By the next week, they will be gone.

Fleur Ng'weno, Box 42271, Nairobi.

COPOGRAPHY IN AFRICAN ELEPHANTS

Members of the Society might be interested in the following notes and could perhaps help in a study of copography in the African elephant. I first observed it at Amboseli and wrote about it in *Africana* magazine in October 1975 as follows:

"In your last issue Daphne Sheldrick describes feeding a baby elephant with saliva from another elephant in an attempt to restore intestinal balance. This prompts me to describe an instance where elephants were observed eating each other's dung.

About ten years ago I was watching a herd of perhaps a dozen elephants crossing Lake Amboseli, returning from their wet season area to the permanent water near Ol Tukai. After they had crossed the lake the elephants stopped to rest and all or most of them defecated. The faeces in most cases were very liquid. As each elephant defecated the others gathered round and ate the dung. When the elephants had moved on we went up to investigate and collect a sample of the dung but every drop had been eaten. It appeared then, that it was not the case of a sick elephant eating the dung of a healthy one as I had at first supposed. Other possibilities are that the elephants were very thirsty or that they had been eating something so important to them that they wanted a second go at it (perhaps a mineral that was also causing the scouring). It is a pity my record is so vague. Soon after this incident I met a young research student who told me that animals often eat the dung of their own species so I presumed I had seen something that was of common occurrence and destroyed my notes. Sylvia K. Sikes later published her book *The Natural History of the African Elephant* in which she states 'Copography occurs in captive elephants but it is not known if it occurs in natural conditions'. I am sure Miss Sikes was right not to rely on the zoo observation; I have seen captive gorillas eat their own dung from sheer boredom and perhaps elephants would do the same. Some comment from a zoologist would be interesting."

I could not find any other reference to this behaviour until I came across the following report from Zimbabwe by P.R. Guy, (1977. *E.Afr. Wildl. J.* Vol.15: 174) entitled Copography in the African Elephant (*Loxadonta africana* Blumenbach):

"The following observations were made in the Senga Wildlife Research Area, Rhodesia, whilst following elephant on foot to obtain data on their feeding behaviour.

On 12 September 1973, the dominant cow of the herd under observation passed very liquid dung, the typical green/brown colour, in which the plant material was well masticated. Younger members of the herd (two subadult females, one subadult male and two unsexed

juveniles) used their hooked trunks to scrape up a small pile of the dung on the ground. They then used their forefeet to push the dung so that a small portion of it fell into the hooked trunk tip and was thus transported to the mouth. Some jostling was observed amongst the animals eating the dung. The adult females did not attempt to feed off the dung but followed the dominant cow to shade. A similar observation was made about 2 h 30 min later, and though it is not known whether the same animals were involved, this is thought likely. It is notable that the temperature during the day was exceptionally high, a maximum of 38°C being recorded in the station Stevenson's screen.

Sikes (1971) In *The Natural History of the African Elephant* reports that 'copography occurs in captive animals, but is not known whether it occurs in natural conditions'. No other mention of copography has been found in the literature."

I again saw elephants behaving in the same way in the Mara Game Reserve about ten years ago and yet again in the Aberdare salient about seven years ago. In the latter case I was able to collect some of the liquid dung and gave it to an elephant researcher who was not interested. I have not found any other white person who has seen this behaviour. Unfortunately my Swahili is poor but I have discussed this behaviour with Africans who think that this is common and suggest that the dung could be used on the skin to cure a disease.

In my observations I thought that all the elephants and not only the young were so keen to eat the liquid dung that they pushed and jostled in a very unelephantine way. Far more, for instance, than when gathering round a felled tree or a small waterhole. To eat the dung was very important to them.

I should like to ask for the help of members in following up this observation since I feel that to understand it might lead to interesting and important veterinary medical knowledge. The elephants suck up every drop and particularly on sand it is difficult to find a sample. Suitable recovery tools are a teaspoon and a film box, also a pair of scissors if on grass. I suggest that if any elephants are passing normal dung this should be collected as a control and that it should be noted whether they are eating the liquid dung or not.

Samples and information could be sent to the Wild Animal Section of the Dept. of Veterinary Services, Box 29040, Nairobi and one could check with Dr Olubaya, Tel. 592331/ 2/2/3/4/5/.

Since I have seen this occurrence three times in about 5,000 days on safari, watching elephants for only a short time each day, it cannot be so very rare. I cannot recall seeing elephants with very liquid faeces on any other occasions. So if you see 'squitty' elephants do watch and collect.

R. Lowis, Box 49538, Nairobi.

NOTES FROM DIANI - SEPEMBER 1990

A Kikuyu friend of ours recently told us that Kenya's cold weather of July to September, whilst best known to them a *Gathano* , is also sometimes known as *Mworia nyoni*, which might be interpreted as "Death of the Birds" or "Disappearance of the Birds". He described and demonstrated graphically how, being so cold, the birds just dropped off their perches !

Be that as it may, September is seldom as cold as July and August and the birds in the Diani Forest this year are unlikely to have suffered much from the current temperatures, which, to our minds were exceedingly pleasant. Besides which, the forest was green and relatively moist. Nevertheless, we have never found bird activity so reduced. Neither camera

nor recorder was in action throughout the ten days of our visit, whilst one morning, in the course of three quarters of an hour's 'bird sit' in the forest, neither of us used the binoculars once. Unwelcome records for both.

To compensate however, we did have two interesting experiences, the first of Bird Parties, and the second concerning the Spotted Ground Thrush *Turdus fischeri.*

Of the mixed bird parties, on two occasions, after an hour and a half in the forest, during which we saw very little, the calls of the Little Yellow Flycatcher *Erythrocercus holochlorus* drew our attention to a group of densely bunched trees where, in the mid-zone below the canopy a small flock of these attractive, rapidly moving little birds were active. Nearby, a family of Wood Hoopoe *Phoeniculus purpureus* foraged diligently without moving far from the group. With them was a Cardinal Woodpecker *Dendropicos fuscescens.* One of the most vocal members of the party was the Black-headed Apalis *Apalis melanocephala* calling with its "sherrrit - cherrrit" call. A pair of Black Cuckoo Shrike *Campephaga flava* was amongst these with a Plain-backed Sunbird *Anthreptes reichnowi* and the ubiquitous Drongo *Dicrurus adsimilis* .

The second occasion was almost identical, coming as a reward perhaps at the end of another fruitless session in the same forest, but some 400 m further south, and right alongside the main tourist road. Again we were attracted by the calling of the Little Yellow Flycatcher. With them this time were the Zanzibar Sombre Greenbul *Andropadus importunis* , a pair of Northern Brownbul *Phyllastrephus strepitans* , two Yellow Bills *Ceuthmocares aereus* , a Drongo, a Black-headed Puffback *Dryoscopus cubla* and a Black-headed Tchagra *Tchagra senegala.* We enjoyed these for several minutes before they broke up, most of them crossing the road to the east to continue their foraging. So much for the mixed bird parties.

Our second special interest concerns the Spotted Ground Thrush *Turdus fischeri,* which has been the subject of previous Notes from Diani.

Every year, whilst at the Coast, we look carefully for this very beautiful bird, a visitor from the south and partial to forest on coral rag, hoping one day to manage a good photograph. We have seldom failed, at least to see it. However, this year,having spent not less than 30 man hours in the forst between 12 and 21 September, all in the most suitable locations and at the best times of day, we had seen no sign whatsoever of our bird, until, on the morning of the 22nd, in the three sites which had been most diligently searched, we found him with no difficulty at all and he was surprisingly approachable. During the following four days we saw him every day.

Is this pure chance, or is this bird moving around the different patches of coral rag forest in a bunch, or was there simply a gap in the flights from the south to and through Diani Forest and on further north ?

Geoffrey and Dorothy Irvine, Box 1356, Naivasha.

SPARROWS A WRESTLING MATCH

On 26 January, 1991 at about 10.15 in the morning I noticed some big commotion on the ground in my Langata garden. A number of birds were fluttering on the ground accompanied by excited twittering and chatter. When I had a closer look, I found two male Kenya Rufous Sparrows *Passer motitensis* engaged in close combat. A few more sparrows were crowding around them twittering but they did not intefere. I did not see whether the onlookers were male or female but they were the ones being noisy, not the litigants.

The two on the ground were wrestling vigorously, feet in each other's faces, pecking at each other's throats. One was on the ground while the other was belabouring it with all his might.

At some stage I thought the 'underdog' was about to be killed. However, after 6-7 minutes they took off to the nearest Acacia tree. As soon as they landed a renewed attack resulted in them becoming entangled again. They fell to the ground where they continued their struggle. When they disengaged themselves a flight and pursuit sequence followed for quite some time in the Acacia tree and a neighbouring Rhus bush.

The pursuer seemed slightly bigger or maybe his feathers were more fluffed up, I was not sure.

At one stage a female was close to them, seemingly watching, but they paid no attention to her.

I should think the dispute was over territory rather than over a mate. It was about half an hour after I had noticed the commotion that they finally stopped their litigation, hopefully having settled their dispute without serious damage to the combatants. I could not follow the ending of the encounter, whether the vanquished one departed or stayed nearby, but after a little while peace reigned once more.

Judith Rudnai, Box 42220, Nairobi.

DRONGOS AT DIANI

While staying at Diani Beachlets in December 1990 we were intrigued to notice that a pair of drongos were imitating the (many) cats around the chalet. In fact it was some time before we realized that it was the drongos miaouing, not the cats! We have stayed there many times before, though not in that particular chalet, and not noticed it previously.

I found it particularly interesting as I had just read an article about the reasons some birds imitate other bird songs and calls. It said that birds did it to establish feeding territories, i.e. to make other birds think that particular area was already over-occupied and thus go somewhere else. So why should a drongo imitate a cat?! And are there previous records of drongos imitating anything?

Mrs J.R. Wood, Box 24615, Nairobi.

A FEW SHORT BIRD OBSERVATIONS

The EANHS Bulletin Vol.20(1) of March 1990 carried a report of a Black Crake robbing Speke's Weaver's nests at Closeburn Estate. On 7 November 1990 the Wednesday Bird Watching Group saw a Purple Gallinule *Porphyrio porphyrio* raiding the same nests. *The Birds of Africa* Vol.2 p.120 says that it has been known to climb into trees to eat the eggs of Cattle and Yellow-billed Egrets.

At the Carnivore Restaurant on 14 November 1990, the Bird Group observed a Great Sparrowhawk *Accipiter melanoleucus* approach the nest of a Pied Crow *Corvus albus* in which the bird was sitting. It was later chased away by Pied Crows and Kites.

In the middle of a bush in the same area, on the same day, we saw a Gabar Goshawk *Melierax gabar* eating a Superb Starling *Spreo superbus* . It tolerated us looking at it, from about 3 m, for a few minutes before flying off with the remains of its prey.

Pat Wooton, Box 46143, Nairobi.

UPLAND KENYA WILDFLOWERS - A REVISION

On 11 February 1991, Dr Andrew Agnew, author of *Upland Kenya Wildflowers* , gave a witty and informative lecture on the revision of his original text. The lecture was illustrated by some exquisite slides provided by Mr Tim Campbell.

Dr Agnew began the presentation by giving three *raisons d'etre* for such a Flora, including its use for inventory, identification, and interest. It provides assessment for conservation, an homage to nature, and a window on the world of plants.

During the roughly 20 year period between the original work and its present revision, Dr Agnew noted changes in diversity patterns for various habitats. For example, at the time of the original work it was thought that the lowlands were poorer in species than the highlands. However, research for this revision has shown that the lowlands had been under-collected; therefore, both highlands and lowlands probably have nearly equal diversity. He also noted approximate increases in diversity of species: 1% increase in new species at upland/alpine levels; 5% increase for new species in wetlands; 15% increase for upland forest species; 17% increase in the bushlands (Machakos, Kajiado, ...); 30% increase of new species in the grasslands (Narok, Mara, Meru, ...).

In the original work, both Nairobi and Elgon areas appeared quite rich in species. Lately, however, the Elgon areas have proved to be not so rich, while the Nairobi area is rich in species and habitats (as well as botanists!). Dr Agnew acknowledged Fleur N'gweno's concern over the development around the Carnivore, indicating that the grassland corridor between Thika and the Ngong Hills is rich in habitats yet, lamentably, is in a high-development area.

Dr Agnew discussed why new records are still being discovered. A lot of bushland and grassland plants are ephemerals, which appear only after rains, and not necessarily every year. In addition, an increase in collection and taxonomic revision of groups, such as the succulents, have generated more species records.

Commenting on the relationship between diversity and disturbance of habitats, Dr Agnew observed that patchy areas, which formerly worried botanists, may actually contain significant plant diversity. Moreover, he noted that in upland habitats, diversity of species has actually appeared to decrease due to lumping of various species of Senecios and Lobelias, resulting in a "taxonomic hiccup" effect.

Finally, in responding to further questions, he mentioned areas in Kenya that need more collection, especially: the Kajiado-Namanga area; Mumias-western Kenya; and the gullies and waddies of the northeast-Niambeni area. He intimated the relationship among density of species, density of botanists, and density of roads affecting collection/taxonomic fieldwork in Kenya to date.

Jim Karaffa / Liz Kungu

SOCIETY ANNOUNCEMENT : ANNUAL GENERAL MEETING

The Annual General Meeting of the Society will be held on Monday 13 May 1991 in the Ford Foundation Lecture Hall of the National Museum, Nairobi.

Nominations for Office bearers and Members of the Executive Commitee as well as matters to be included in the Agenda should be sent to the Hon. Secretary, Box 44486, Nairobi as soon as possible.

The Chairman of the Society, Prof. S.G. Njugana has intimated that he wishes to stand down so nominations for this position are requested.

JOURNAL OF THE EAST AFRICA NATURAL HISTORY SOCIETY AND NATIONAL MUSEUM Vol.80 Number 196

A Provisional, Annotated Checklist of the Butterflies in Lake Manyara National Park, Arusha Region, Tanzania. By Norbert J. Cordeiro.

This issue of the *Journal* is now available on application to the Hon. Secretary, Box 44486, Nairobi, Kenya.

MEMBERSHIP:
This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the Joint Society-National Museum Library (postal borrowing is possible); a copy of the EANHS BULLETIN every four months and a copy of each Journal published during your period of membership. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

JOURNAL:
The Society publishes the Journal of the East Africa Natural History Society and National Museum. Each issue consists of one paper; sometimes two or more short papers may be combined to form one number. Several may be published during one year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

EANHS BULLETIN:
This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS BULLETIN), P.O. Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs can be published.

SCOPUS:
The Ornithological Sub-Committee publishes this bird journal five times a year, cost Kshs. 100 per annum. All correspondence to D.A. Turner, P.O. Box 48019, Nairobi, Kenya.

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Subscriptions are due by 1 January. From July you may join for Kshs 50 and receive publications from that date. Application forms for membership are obtainable from the Secretary, P.O. Box 44486, Nairobi, Kenya.

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THREE BUTTERFLIES OF TAITA

PART 1. *PAPILIO NIREUS*

INTRODUCTION

My interest in and records on the butterflies of Taita started in late 1988. By that time I had discovered the larvae of *Papilio nireus* on the shrub *Clausena anisata*; so I started to record the appearance of these (and to some extent the adults too), by visiting the area of Choke. This is nearly one hour's walk from where I live in Taita. I kept records roughly every three weeks - although, as they were not strictly timed, their usefulness is qualitative rather than quantitative. However, by the end of 1989 this had shown that there were times when the larvae were completely missing. I had also found out that the larvae also occur on the prickly climber *Toddalia asiatica* - which is very abundant in that area. Further, there are two colours of pupa - brown and green; that there is a parasitic wasp, which forms its single pupa inside a half-grown larva; that there seem to be more females than males emerging to adulthood; and that some pupa take a long time before emerging - especially if they have been refrigerated.

The aim in 1990 has been to understand these features of *P. nireus* further, as much as time has allowed.

SEASONAL VARIATIONS

The same area was visited roughly every two months, and analysed separately for *nireus* eggs and larvae that had been found per hour. In the case of Choke area, there were three separate places searched. Area 1 was a section of *Clausena* shrubs, growing under other larger trees, in a slightly separate small 'wood'. Area 2 was a path along which there was some scattered *Toddalia* plants. This was fairly open. In contrast Area 3 had *Toddalia* growing under *Pinus* trees and was therefore shaded. The results were then averaged out over the three areas.

To this was added a further study area, this time two hours' walk away, in Mwambirwa. This includes remnants of indigenous forest, especially along streams or in valleys, but most has been completely replanted with *Pinus* sp. Here, I chose six areas to check. Area 1 was a small piece of *Toddalia* by the road, near a stream. Area 2 was a larger portion further along the road - fairly shaded. Area 3 was a small section off the road, shaded. Area 4 was a large section of *Toddalia* , off the road, fairly shaded, although less so after a few pine trees were blown over by gales! Area 5 was by the road, therefore fairly light and Area 6 was a couple of plants, in fairly deep shade right off the road. All this was *Toddalia*, and no *Clausena* was seen.

The results are shown in Fig.1 for Choke and Fig. 2 for Mwambirwa. In the case of Choke, there was clear evidence of a fall-off in March, then a rise with the coming of the rains, and finally a drop-off with the cold season. No eggs or larvae were found in August or September. Fig.1 also shows the composite total of rates *for eggs and larvae together*. Rates of discovery for both peaked in May after the rains had started, and the trends for each are very similar. The average size of larvae was 12.5 mm - which represents an age of maybe 3 weeks after egg-laying. Since the search for eggs and larvae only took place every two months, the rate of finding larvae therefore reflects the rate of egg-laying some three weeks previously.

Trends are less consistent at Mwambirwa - where the area in general is much more wooded and shady. Whether it is the vegetation which makes the main difference is not

Fig. 1. Numbers of eggs and larvae of *P. nireus* discovered per hour of searching at Choke (January 1990 - November 1990)

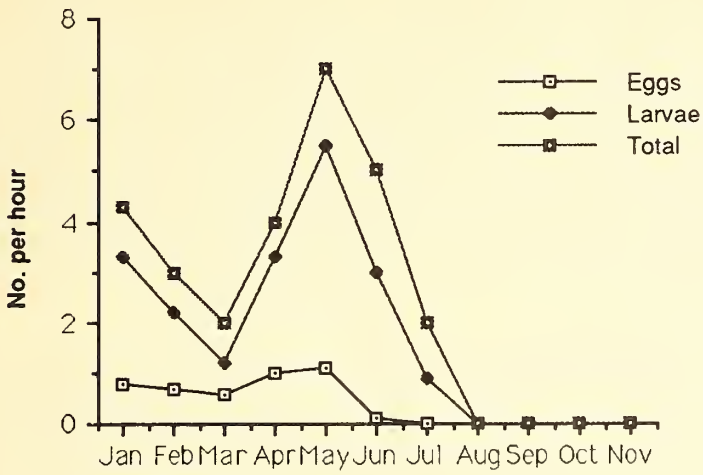
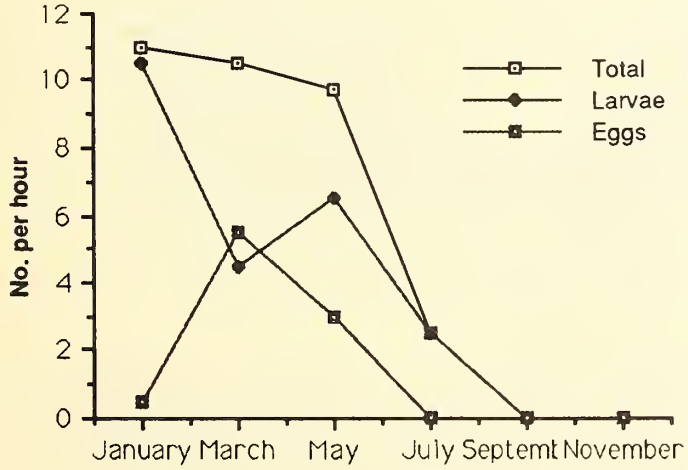


Fig. 2. Numbers of eggs and larvae of *P. nireus* discovered per hour of searching at Mwambirwa (January 1990 - November 1990)



clear; but the overall figures are nearly double the rate as compared with Choke. The rates for finding larvae change in a similar manner to those of Choke over the period (although the average size was smaller - 8.7 mm) but the egg-laying seemed to follow a different trajectory. Egg numbers may be subject to more statistical variation, especially if females tend to concentrate their eggs in particular places and if they are scarce. Moreover, the egg stage is much shorter than that of the caterpillars and egg numbers will therefore be more subject to day to day variations in butterfly activity. If the average of eggs and larvae is considered, since overall numbers are low, the vagaries of individuals are better ironed out. Judging from the total numbers,then it does seem that the distribution pattern for Choke and Mwambirwa varies. The more forested areas of Mwambirwa maintained a more consistent population of P. *nireus* than did the lower and less forested area of Choke. But the results should really be repeated for another year, to see if this always holds.

THE EFFECT OF WEATHER

Weather records had been kept for Mbale, where I have lived (1,200 m). The rainfall (Fig.3) was easy to measure, although it will have been a bit higher for Choke (3,410 m), and maybe 50% higher for Mwambirwa forest (3,4 00 m- 3,500 m). The maximum and minimum temperatures on our back verandah had also been recorded; the maximum should perhaps be reduced slightly during the hotter months as the afternoon sunshine near the thermometer could have pushed it up a bit. However, as any caterpillars or pupae that were being reared were often kept quite near that very area, the results are relevant. The maximum and minimum temperatures for the month were then averaged to give the figure in Fig.4. Choke being higher, will be slightly cooler than Mbale. Mwambirwa forest probably never goes above 25 C even at midday in the dry season. So the life history will take much longer there than it ever does at Mbale - where incidentally, there is also *Toddalia* and *P. nireus*.

a) The first trend in egg and larval populations which seems to exist, is a drop in numbers from January to March - then a rise again to May. This assumes that we ignore the egg-laying in Mwambirwa; but it agrees with 1989, when with only larvae being counted, the largest numbers were found also in January and May. And that year, the counting had been done more frequently. Clearly every year's weather differs; but the period February/March tends to be the hottest - and often dry, although this year there was some rain. So, either low rain or high temperatures may reduce the numbers of P. *nireus*. Conversely, the temperature starts to decrease when the rains come in March/April - and that is when the numbers rise again. One would guess that except when it is very hot (and so leaves and eggs could dry out), then *P nireus* has no problems, but that the amount of moisture and rain is more significant than the temperature. Rain directly affects the food value of leaves, not to mention the supply of nectar for the adults - who then have a bigger chance of surviving with enough fitness and energy to lay more eggs.

b) The second trend is the marked decline from June/July onwards. the same was seen through counting larvae in 1989, and it is clear from both areas in 1990. The reason for this decline, as will be shown below, is that as the temperatures drop, an increasing number of pupae enter a resting 'hibernation' stage which is only broken when the warmer weather arrives around September.

Fig. 3. Rainfall at Mbale (January 1990 - November 1990)

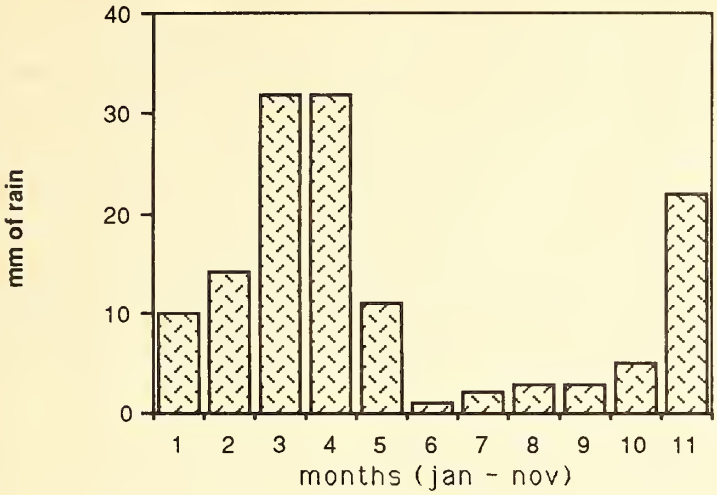
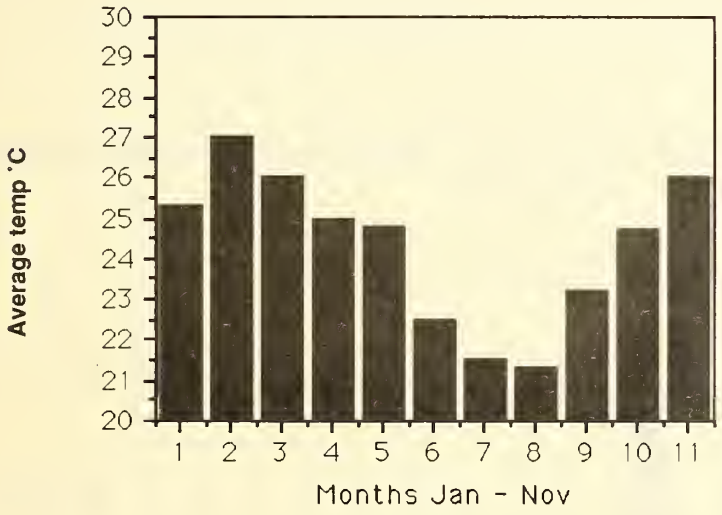


Fig. 4. Mean daily temperatures at Mbale (January - November 1990)



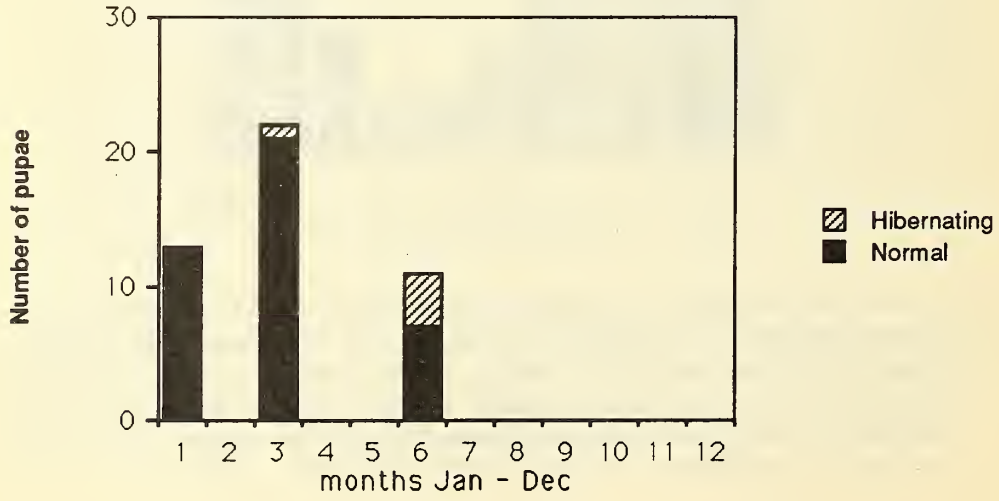
c) Indeed, when the weather does get warmer, it still takes some time for numbers to pick up. Hence the 'nil' reading for early November - even though some eggs were found on the same day at a lower altitude than Mwambirwa - and around the same time adults were seen laying at Mbale. Weight and temperature may have a (predictable?) effect on how soon egg-laying is noticeable. In previous years also, larvae were not found at Choke until late October and November

HIBERNATION

Fig.5 shows the number of hibernating pupae amongst reared insects between January and June. In January, some 13 larvae collected from various areas had pupated - and all had emerged in an average of 12.5 days. (Only for these were the records accurate enough to know exactly when each pupa started and finished the pupal stage). From those that emerged, there were three matings; and these resulting larvae pupated in March - when the temperature was still on average, fairly high. Of these 20 emerged in the usual sort of time. But one did not emerge until late October! During May, a wild female laid eggs, whose larvae pupated in June. By now the weather was colder. Only three emerged in the 'normal' time, the remaining four emerged in early/mid October. It had been in the second half of September that the maximum temperatures had first climbed above the 30 C mark to any great extent. Within around three weeks, the 'hibernation' had broken; all emerged within 6 days of each other. Rain appeared to make no difference; when the pupae were put in the rain for a short time, the first came out the next day, and the last a week later. In view of its effects on insect metabolic rates, it would be natural for temperature to be the factor which both initiates and also breaks the hibernation.

Finally, there emerged towards the end of that month, the solitary individual referred to above, which had pupated in March. The first to pupate, the last to emerge! This also shows that there is variation. As explained, they did not all emerge on the same day; so they may have needed different temperatures in order to 'break' the hibernation. The best example is the individual still pupated since March when the rest had emerged. The 'thermostat' which set that one hibernating was obviously set very high. And presumably, the higher it is set, the higher the temperature needed to break the hibernation. Do all *nireus* individuals have such a mechanism? These results do not show. They can be as well explained by a varied setting of the thermostat alone; or by such variations combined with the possibility of some individuals having no such

Fig. 5. Numbers of normal and hibernating pupae reared at Mbale between January - June 1990



setting or ability to hibernate at all. A very few individuals are still seen even when the weather is still cold - but perhaps the hibernation had been broken by chance sunshine on the pupa. Bearing in mind that the places investigated (Choke and certainly Mwambirwa) are actually cooler than Mbale (where the temperatures were recorded), then the drop in numbers during the cooler months is completely explicable. It is worth speculating too, that this thermostat mechanism should enable *nireus* to 'adapt' (as the particular average setting is selected for) to a wide variety of different altitudes and climates.

PARASITIC WASPS

With this parasite, the adult wasp presumably lays a single egg in the young caterpillar. The growth of seven wild caught larvae stopped when they reached a size of between 12 and 18 mm (average 15 mm). They then contracted gradually, becoming fatter, and whitish in colour, until the brown colour of the wasp pupa showed through the larval skin. The size was then 9 mm X 44.5 mm. The time taken to emerge was not always measured exactly - though it was never more than 17 days. Probably it is much less; because in one case (with average temperatures of 27.2 C) it emerged in 8 days. And in another (with average 25.8 C) it emerged in the lesser time of 6 days. In the latter case, the larva had been infected with the wasp when it (and several others) were put on local *Toddalia* leaves soon after they had hatched from eggs. Since it had been put out on 1 March, and the adult wasp emerged on 21 March, the whole life cycle of the wasp was complete (apart from egg laying) in, at most, 20 days (average temperature about 25.8 C).

More evidence is needed as to what stage(s) the adult wasp is able to lay its eggs in the larvae. But a reasonable guess would be that is usually (or always) in the first instar. As noted above, the range of the larval sizes which were reached before the wasp pupated, were between 12 and 18 mm. Under conditions at Mbale, that corresponds on average, to 3.5 days' worth of growth - especially as a change of instar occurs within that size range. Conversely, if larger larvae were found, which still developed the wasp, it would suggest that wasp eggs are laid even into the second instar. it needs very young larvae to be left outside regularly at various stages, so that they become infected (or not) in order to establish the details of this.

What proportion get infected? Firstly, there is the obvious result, that the wasps need larvae to infect. Therefore they are likely to be more abundant when the larvae are too. Fig.6 shows the number of empty (or sometimes still full) wasp pupal cases found at Choke and Mwambirwa. January was a lean month - despite fairly high numbers of larvae. But thereafter the number increased fairly steadily, until dropping off as the 'cold' season reduced the number of larvae. The peak therefore followed the larval peak - which raises the question as to how far the number of parasites could actually cause the drop - or at least combine with the hibernation, jointly, to effect this decrease.

The statistics would not allow an accurate assessment as to how the proportion infected varies over the year. But the figures so far, taken over all the information gathered, still suggest some possible conclusions. In total, 51 larvae have been collected in the wild (we can ignore some 10 which died for various reasons in that we do not know whether they were infected with this wasp or not). That leaves 41 - of which three died with ichneumon wasps, and seven with these other wasps. That gives a figure of 17% spread over the year; and presuming that there is some seasonal variation (which seems likely from Fig.6), then this could easily be over 30% at some times of the year, and therefore influence the numbers in the *nireus* populations.

Fig. 6. Numbers of parasitic wasp pupae found at Choke and Mwambirwa (January 1990 - November 1990)

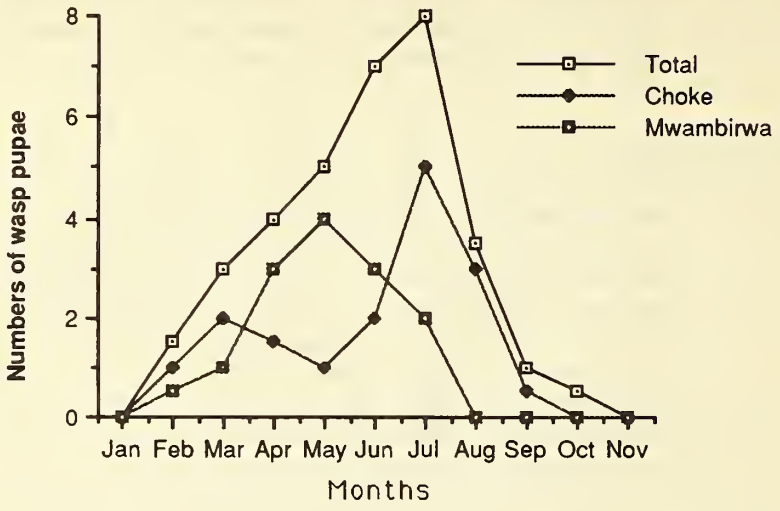
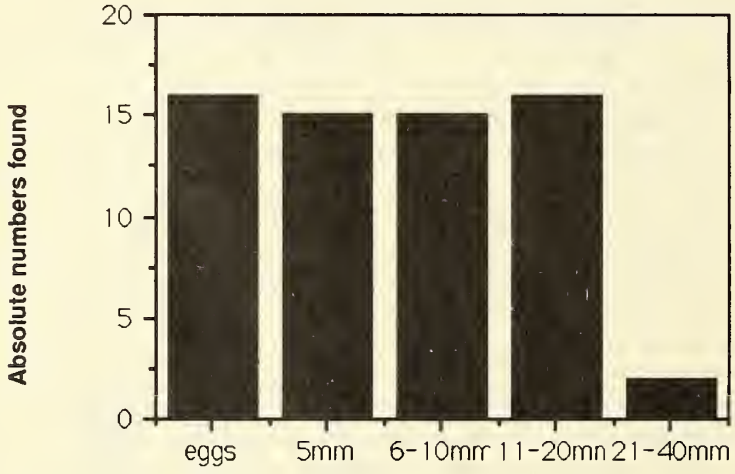


Fig. 7. Age classes (size distribution) of immature wild *P. nireus* collected at Choke and Mwambirwa



Another statistic implies that the effect might be larger still. Fig.7 shows the various numbers of egg and different larval sizes, which were found on Choke and Mwambirwa combined. Up to 20 mm, the number seems fairly constant; but after that, there is a large drop off. The scarcity of larvae over 20 mm long may reflect heavy levels of parasitism, although it could also be due to predation of larger caterpillars by birds.

It only remains to add that the ichneumon parasite does not seem so prominent in this situation. Three captured larvae only succumbed to ichneumon wasps, and one only wild infected specimen was seen. The larval sizes reached were 18, 26, 28 and 31 mm; and the months when the ichneumon pupae emerged from the larvae, were June 1988, and January, March and June 1990. Their numbers do not justify them such a role in control of overall *nireus* population numbers, as has this other wasp.

UNRESOLVED ISSUES

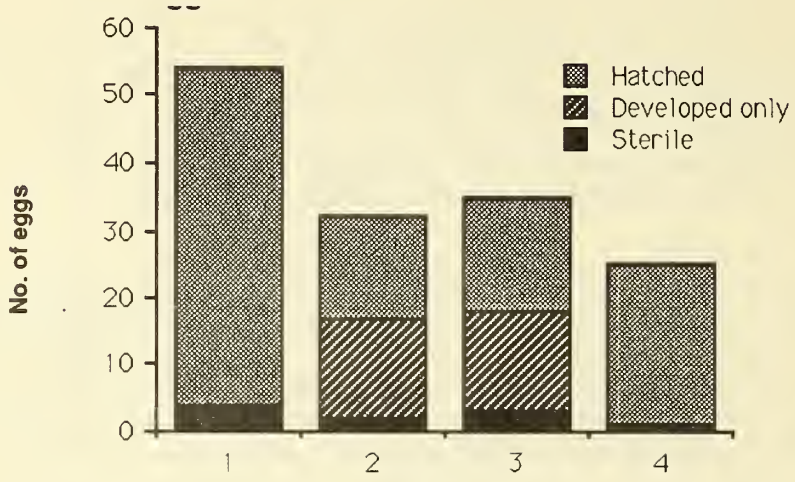
a) Pupal colouration: The total number of wild taken larvae which were followed right through to the pupal stage, was 31. Of these, 23 were 'green' pupae, and 8 were 'brown'.That gives the proportion of brown pupae as being 26% but what rules the inheritance of this? In another P*apilio* species, it is said to be controlled by 'environmental factors'. But is *P. nireus* the same? And if it is environment, why is it that larvae kept under the same conditions, in the same container, will pupate - some green, some brown? But I have failed to do enough breeding to resolve the issue. A cross between two 'green pupal adults, produced 4 brown pupae to 3 green - hardly consistent with a 1:3 ratio to be expected if brown was the recessive gene, but probably possible. Similarly, two crosses were done with 'brown X green' forms; one produced 1 brown to 6 green, and the other 2 brown to 6 green. Again, to explain it on classical terms, the 'green' one in both cases, would have had to be heterogeneous for brown - although even then, the ratio is hardly the 1:1 as would have been expected. It was a pity that the test case, of brown X brown, was never possible. As the brown pupae are less common, more larvae need to be reared to stand any chance of carrying out that cross. So, the inheritance of pupal colour in n*ireus* is still unproven; and if it is not directly hereditary, the further question will still be as to what other factors are then responsible. If this is taken further in future, it will also be worth seeing if the sex of the butterflies has any bearing on the issue. For example, in the cases where the offspring were 6 green: 2 brown, it was striking that all 6 green individuals were female, and both the 2 brown were males. In another case, there was no 'discrimination' on grounds of sex, and each sex came half from brown and half from green. But the issues may need some resolution. In some cases, it was noted whether the pupation occurred either on the host plant, or away on the side of the container. Again, there was no great difference. From a total of 19 green pupae, 74% stayed on the plant; and from the 10 brown pupae, the proportion was 60%. So the place of pupation does not appear to determine its colour.

SEX RATIOS

It seems that there is regularly a higher number of females emerging from captured larvae than there are males. Out of 25 adults taken from wild larvae, 15 were female, only 10 male. Further, of those bred direct from eggs - 18 were female and 10 were male. Presumably from the 'captive results, one rules out any other influence, such as that the wasp parasite might attack only male larvae. Otherwise, the explanation might have to be in terms of the female larvae surviving better than the male ones.

There is another possibility which needs checking. Fig.8 gives the results of egg hatchings, showing that there is often a very high rate of fertile eggs which hatch, from 92-95%. But in two instances, there were an almost equal number of eggs which seemed

Fig. 8. Fertility and hatching rates of *P. nireus* eggs obtained at Mbale



to develop - but then never hatched. Although these two broods give a ratio of 10 females to 4 males, the possibility that male eggs have lower hatching rates needs further experiment.

CONCLUSION

P. nireus is rich in variety and interest - some of which has emerged above. Not only does it lay eggs on *Clausena* and Toddalia, but also sometimes on *Citrus*, and on the *Fagaropsis angolensis* (?) which I recently found right in our garden. (*P. ophidocephalus* also likes that tree, as it does *Clausena*). I wonder whether adult females lay indiscriminately, or have restricted preferences; it could explain the failure to get eggs out of some sleeved females which had been hand mated in captivity after emerging. Even the mating itself is not always straightforward. Maybe this reflects the territorial/non-territorial male division, which the ICPB report (1) found for the related *P. desmondi*. Certainly only some wild-caught males 'know what to do'; and I found that the proportion of such to be no better nor worse using those males which I had emerge from the pupae. Even the sleeving seems more difficult than in a species such as *P. dardanus*, probably because the darker body colour of *nireus* renders it likely to overheat rather quickly if the sunlight is at all strong. The beauty and challenge of this relatively common species still remains !

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NOTES ON THE SHUME-MAGAMBA FOREST OF THE WEST USAMBARA MOUNTAINS, TANZANIA

The Shume-Magamba forest of the West Usambara mountains covers a large area of montane and upper montane forest reaching 2266 m on Sungwi peak. The summit vegetation is 4 m tall *Phillipia* heath with *Maytenus acuminata* and *Syzygium sclerophyllum*. Below this the moist forest can be arbitrarily divided into upper montane forest above 1800 m and montane forest below 1800 m. Canopy height increase from 10 m on ridge tops at 2180 m to 30 m with 50 m tall emergents (*Chrysophyllum gorungosanum*) at 1780 m. North of Sungwi the once extensive dry montane forest with *Juniperus* has mostly been cleared, converted to pine plantations or is heavily disturbed. The Magamba area was the subject of a study by Pitt-Schenkel (1938), one of the earliest of its kind, and was much later used for *Ocotea usambarensis* regeneration experiments following heavy logging for *Ocotea* (Willan, 1965). Old logging sites contain many small poles of *Macaranga kilimandscharica* and *Rapanea melanophloeos* . An old experimental plantation of *Rapanea* was also found.

Trees in upper montane forest included: *Albizia gummifera, Allophyllus abyssinicus, Aningeria adolfi-friedericii, Aphloia theiformis, Bersama abyssinica, Canthium oligocarpum, Cassearia engleri, Cassine aethopica, Cassipourea malosana, Catha edulis, Chrysophyllum gorungosanum, Croton dictyphlebodes, Cryptocarya liebertiana, Cussonia spicata, Dasylepis integra, Dombeya torrida* subsp. *erythroleuca, Ekebergia capensis, Faurea saligna, Ficus thonningii, Galiniera saxifraga, Ilex mitis, Macaranga kilimandscharica, Maesa lanceolata, Maytenus acuminata, Neoboutonia macrocalyx, Nuxia congesta, Ochna holstii, Ocotea usambarensis, Olea capensis, Pittosporum viridiflorum, Polyscias fulva, P. stuhlmannii, Psydrax parviflora* subsp. *rubrocostata, Prunus africana, Rapanea melanophloeos, Syzygium sclerophyllum, Tabernaemontana pachysiphon, Trichocladus ellipticus, Vepris stolzii*. Shrubs and shrubby herbs included: *Chassalia parviflora, Draceana afromontana, D. laxissima, Lasianthus kilimandscharica, L. kilimandscharica* subsp. *laxinervis, Lobelia gibberoa, Memecylon deminutum, Mostuea brunonsis, Pauridiantha paucinervis, Peddeia fischeri, Piper capensis, Psychotria cyathicalyx*. Climbers included: *Embelia schimperi, Landolfia, Schefflera myriantha, Toddalia asiatica*.

Trees in montane forest included: *Albizia gummifera, Aningeria adolfi-friedericii, "Apodytes dimidiata", Cassipourea malosana, Chrysophyllum gorungosanum, Cleistanthus polystachyus, Craibia brevicaudata* subsp. *schliebenii, Cussonia spicata, Dasylepis integra, Dombeya torrida* subsp. *erythroleuca, Drypetes gerrardii, Entandrophragma excelsa, Ensete ventricosa, Garcinia volkensii, Macaranga kilimandscharica, Polyscias fulva, Podocarpus falcatus, Strombosia scheffleri, Tabernaemontana pachysyphon, Trichocladus ellipticus*.

The forest towards Shume becomes drier and would once have graded directly into *Juniperus* forest as evidenced by the occasional *Juniperus* occurring in otherwise broad-leaved forest. A clue to dry forest biogeography comes from the specific epithets of the trees that occur there: *Bersama abyssinica, Cassine aethiopica, Ekbergia capensis* and *Olea capensis*.. Many of the species are widespread and also occur in Ethiopia and the southern Cape. However, some dry forest trees of restricted distribution do occur in the West Usambara, for example *Croton dictyphlebodes, Macaranga conglomerata* and *Calodendrum eickii*, the latter species occurs in the *Juniperus* forest proper. Another endemic tree, the curious monotypic endemic genus *Platypterocarpus* has been collected in the area, but was not seen on this visit.

I gratefully acknowledge funding from the World Wildlife Fund during field work. Permission to conduct research was granted by the Tanzanian Commission for Science and Technology.

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NOTES ON THE BAGA FOREST WEST USAMBARA MOUNTAINS

The Baga Forest (ca. 4° 47' S. 38° 28' E.) is an extensive area of montane and upper montane forest just east of the centre of the West Usambara mountains peaking at 2032 m on Kwagaroto. Areas that have not been logged contain many large and beautiful trees which give way to *Aguaria* and *Phillipia* heath on the highest points and on the drier western side.

The forest was visited from the University forest reserve at Mazumbai on the eastern side and Herkulu tea estate on the south-western side over an altitudinal range of 1500 to 1950 metres.

Trees observed included: *Agauria salicifolia, Albizia gummifera, Aningeria adolfi-freidericii, Aphloia theiformis, "Apodytes dimidiata", Bersama abyssinica, Caesaria engleri, Canthium oligocarpum, Cassipourea malosana, Chrysophyllum gorungosanum, Cleistanthus polystachyus, Cola greenwayi, Craibia brevicaudata, Dasylepis integra, Draceana steudneri, Drypetes gerrardii, D. usambarensis, Entandrophragma excelsa, Eugenia capense, Ficalhoa lauriflolia, Garcinia volkensii*, Gen. nov. aff. *Sideroxylon* sensu FTEA, *Hallea rubrostipulata, Hirtella megacarpa, Ilex mitis, Isoberlinia scheffleri, Lepidiotrichilia volkensii, Macaranga kilimandscharica, Mammea usambarensis, Maytenus acuminata, Myrica salicifolia, Neoboutonia macrocalyx, Newtonia buchananii, Nuxia congesta, Ochna holstii, Ocotea usambarensis, Olea capensis, Parinari excelsa, Phoenix reclinata, Podocarpus, Polyscias fulva, P. stuhlmannii, Psydrax parviflora* , subsp. *rubrocostata, Rapanea melanophloeos, Sorindeia madagascariensis, Strombosia scheffleri, Strychnos mitis, Syzygium guineense* subsp. *afromontanum, S. sclerophyllum, Tabernaemontana* sp., *Vepris stolzii, Xymalos monospora, Zenkerella grotei.*

Shrubs include: *Cyathea, Chassalia discolor. C. parviflora, Dicranolepis usambarica, Draceana deremense, D. laxissima, Lasianthus kilimandscharica, L. kilimanscharica* subsp. *laxinervis, Maytenus undata, Memecylon deminutum, Mimulopsis, Pauridiantha paucinervis, Piper capense, Phillipia, Psychotria, Salacia lembachii.*

Baga forest is rather similar to Shagayu forest in the species present and the size of some of the trees. It is important from a conservation point of view because it is adjacent to the 450 ha University Forest Reserve at Mazumbai. Apart from the 450 ha

patch of forest on Malundwe Hill in Mikumi National Park, the University Forest Reserve is the only other strictly protected area of the endemic rich Eastern Arc forest type, though hopefully a new National Park covering the northern Uzungwa forests will be gazetted soon. Forest to the east of Mazumbai was degazetted and cleared for cultivation in the 1970's, that to the north and south was cleared some time ago. Forest along the western boundary of Sagara ridge is continuous with the much larger Baga Reserve and so would enable migration of animals and affords protection against encroachment. A quick taxonomic note is the specimen of *Cleistanthus polystachyus* which I collected at Herkulu and which is cited in FTEA as being unusual, actually came from a low shaded branch which may account for its larger leaves.

I am grateful for support from the World Wildlife Fund during field work. Permission to conduct research in Tanzania was granted by the Tanzania Commission for Science and Technology. William Hamisi of Herkulu tea estates helped us very much.

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NOTES ON THE FORESTS AT AMBANGULU AND KUNGA IN THE WEST USUMBARA MOUNTAINS, TANZANIA

The tea estates of Ambangulu (5°5'S, 38°26'E) and adjacent Kunga are located in the southern corner of the West Usambara mountains. The area contained extensive moist forest in the past, much of which has been cleared over the years for plantations of tea and quinine. The mean annual rainfall at Ambangulu over 45 years was 2088 mm.

Forests at between 1000 and 1360 metres in altitude were visited and the following trees, shrubs and climbers observed:

Trees: *Afrosersalisia cerasifera, Alangium chinense, Albizia adianthifolia, A. gummifera, Allanblackia stuhlmanii, Alsodeiopsis schumannii, Aningeria adolfi-friedericii, Anthocleista grandiflora, Bersama abyssinica, Caloncoba welwitschii, Canthium captum, Cassipourea gummiflua, Celtis africana, Cephalosphaera usambarensis, Chrysophyllum gorungosanum, Cleistanthus polystachyus, Cola greenwayi, Craibia brevicaudata, Cryptocarya liebertiana, Cussonia spicata, Cylicomorpha parviflora, Cynometra* sp., *Dasylepis integra, Diospyros occulta, Drypetes gerrardii, D. usambarica, Englerodendron usambarense, Ensete ventricosa, Entandrophragma excelsa, Eugenia capense, Ficus thonningii, F. sur, Garcinia buchananii, Greenwayodendron suaveolens, Harungana madagascariensis, Heinsenia diervilleoides, Isoberlinia scheffleri, Leptonychia usambarensis, Macaranga capensis, Maesa lanceolata, Margaritaria discoidea, Maytenus acuminata, Mesogyne insignis, Milicia excelsa, Myrianthus holstii, Neoboutonia macrocalyx, Newtonia buchananii, Ochna holstii, Ocotea usambarensis, Odyendea zimmermannii, Oxyanthus speciosus, Parinari excelsa, Polyscias fulva, Rauvolfia caffra, Sapium ellipticum, Sorindeia madagascariensis, Strombosia scheffleri, Syzygium guineense* subsp. *afromontanum, Tabernaemontana* sp. *Trema orientalis, Trichilia dregeana, Trilepisium madagascariense, Uvariodendron oligocarpum, Vepris stolzii, Xymalos monospora, Zanthoxylum gillettii, Zenkerella grotei.*

Shrubs: *Chassalia parviflora*, *C.* sp., *Dracaena deremensis*, *D. laxissima*, *Memecylon cogniauxii*, *M. erubescens*, *Pauridiantha paucinervis*, *Piper capense*, *P. umbellatum*, *Rubus* sp., *Salacia lehmbachii*, *Turrea holstii*, *Zimmermannia* sp. aff. *capillipes*.

Climbers: *Acacia* sp., *Agelaea heterophylla*, *Culcasia falcifolia*, *Landolfia* sp., *Tiliacora funifera*.

The forest is rather similar to that on the East Usambara mountains around Amani and can be defined as submontane forest with montane forest on the highest ridges. The occurrence of lowland forest species such as *Afrosersalisia cerasifera* and *Milicia excelsa* together with the Eastern Arc endemic *Cephalosphaera usambarensis* define submontane forest, whereas montane forest is indicated by the occurrence of *Ocotea usambarensis* at an altitude of 1360 m. Secondary and drier forest species such as *Cussonia spicata*, *Harungana madagascariensis* and *Rauvolfia caffra* occur on the forest edge at 1230 m. Deep in the forest are banana groves said to be places of refuge in the past. More recent disturbance results from logging for *Entandrophragma*, *Isoberlinia* and *Newtonia*. The tree *Parinari excelsa* is avoided because its wood clogs the saws. Attempts to replant *Newtonia* failed because its long tap root made transplanting difficult, but the introduced *Maesopsis eminii* grows well and is readily dispersed by hornbills.

I am very grateful for kind hospitality shown by Herbert and Jane Kingazi of the Ambangulu Tea Estate. The Tanzania Commission for Science and Technology granted permission to conduct research in Tanzania and field work was funded by the World Wildlife Fund.

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A NEW RECORD FOR KENYA IN *RAPHIONACME*

The genus *Raphionacme* (Periplocaceae) is widespread in drier regions of Africa south of the Sahara Desert (Venter & Verhoeven, 1988). The plants are geophytes, consisting of subterranean fleshy tubers from which annual leafy flowering shoots appear. In some species the shoots are short and erect, whilst in other species they are climbing. When not in flower, the leafy shoots are inconspicuous amongst the ground cover of herbaceous plants or climbing in leafy shrubs. Consequently these plants are often overlooked, unless they are seen in flower, and most species are poorly represented in herbaria.

The plant reported here was found near Lake Victoria, in a rocky area close to a river bank not far from Kendu Bay. Only one plant was seen, though the surrounding area was not searched thoroughly. The tuber was securely wedged in a crack in a large rock, and impossible to extract. From the top of the tuber arose a branching flower-ing shoot, 12 cm tall. The shoot was collected and pressed (*Hartmann & Newton 28593*, K).

Agnew (1974) includes only two species of this genus, *Raphionacme madiensis* from Mount Elgon, and *R. splendens* from Nairobi, but the Kendu Bay plant is completely different from either of those. Nothing similar was found in the East African Herbarium, in Nairobi, where there are specimens of some other species from outside the area of Agnew's book. The recently described *R. borenensis* (Venter & Gilbert, 1989), from north-east Kenya, Ethiopia and Somalia, is also different. After a search through specimens and photographs in Kew Herbarium I reached the tentative conclusion that this new gathering is *Raphionacme michelii* De Wild. (*Ann. Mus. Congo*, ser.5, 1-181.1904), a species known from the Kimbala area of Zaire.

Although the flowers of many species are attractive, the members of this genus are not in cultivation as decorative plants in gardens. Amongst succulent plant enthusiasts, plants with tubers are known as caudiciform plants, and a few species of *Raphionacme* can be seen in some specialist collections. They are grown in pots with the tubers at ground level. One species, *R. utilis* Brown & Stapf, was once grown commercially in Angola as a source of a substitute for rubber (Stapf, 1908).

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THE TREE OF ENLIGHTENMENT

I rode out one morning to try to photograph the 'Tree of the Elders' (see *EANHS Bulletin* Vol.21 (1) March 1991) with Mt. Kenya in the background. It turned out to be impossible, so I concentrated on details. Whilst to-ing and fro-ing to get the best angle on an aerial root, I suddenly recalled what some Maasai friends had taught us many years ago. When they came to a particularly dark, dense tree, which they called o*l-endeti*, growing near a spring, they stopped to pluck handfuls of grass. They placed these wisps, the Maasai token of goodwill and blessing, in amongst the hanging roots. One must always do this, they said, our fathers have taught us so. Why? Because when Ngai gave us cattle, the first cattle on earth, he lowered them from heaven by the aerial roots of this tree.

I checked my old photograph, and Andrew's text in our book *Maasai*. Sure enough, the tree looked like *F. thonningii*. And to judge from the apparent age of our 'Tree of the Elders' here, and the words of old men who recall that it was as large as it is now when they were yet small children, it is a very old tree. It must have been sacred when the Maasai were still grazing their cattle here. And there are some Maasai back here now; they survived the expulsion by melting into the Mukogodo population, but they deny firmly that they are *Ndorobo* (though others around call them that). One Mukogodo-Maasai is living on the plot just above the sacrificial tree in the ravine. He concurred that this was *ol-endeti*, or *rititi*. He told me that the word means 'sacred place', and that his people, like the Meru, Kikuyu *et al.*, made sacrifices under such trees. But that when the women went to pray they would not sprinkle the roots with millet but, far more precious to the pastoral Maasai, with milk.

My mind wandered further back, farther afield, to when I lived in West Africa. In many places fig trees had been planted by the British and French as shade trees, but there

were vast aerial-rooted ones whose existence clearly predated colonial days. Such mammoths were natural 'market trees' where colourful crowds gathered for the cyclical shopping sprees. Some immense fig trees were specifically sacred. There was one very famous one, a huge hallowed tree of the sort called *opanto* near where I lived, in Akropong in Ghana.

My mind returned to this side of Africa. Recently we went to Madagascar. The otherwise dreary port town of Tamatave has (to me) one memorable feature: a small park made up of a few immense trees whose aerial roots have grown to form pillar-like props for the huge horizontal lower branches. Walking amongst them was like - I imagined - walking amongst a herd of elephants, all great grey legs and trunks, under a dark jungly canopy. The guide book said they were banyans. Banyans? No, not Indian merchants but Indian figs. Since *Ficus bengalensis* has been planted over so much of the world by Indian traders, *Baniyas* or *Banyanis*, the English (and French) called it the 'banyan tree'. I racked my visual memory to recall if I had seen any such arboreal banyans in Kenya where there are thousands of human ones. In Mombasa for instance?

Mombasa . . . figs . . . of course !

I had been in the Siva Temple, the main Hindu temple in town, during Shradda, the days when Hindus pay their respects to their ancestors. In the corner of the spacious temple precincts grows a tree with fluttering heart-shaped leaves. People were gathered there, winding white strings round its trunk and pouring little libations of milk. The Hindus believe that when their ancestors, the *pritis*, descend to earth, they perch in such trees. The trees are called pipals. The pipal is - - a fig tree.

The pipal is such a sacred tree that western botanists have named it *F. religiosa*. It has been sacred in India since time immemorial. Some of the Dravidians, the aboriginal Indians, created a grand civilization that flourished in the Indus Valley ca. 2000 BC. Numerous small tablets have been recovered from the cities of Mohenjodaro and Harappa. Some of these seals depict a figure, presumably a deity, sitting cross-legged under a distinctly pipal-leaved tree. The sanctity of the tree not only survived the Aryan invasions and the conversion of the natives to beliefs introduced by the Brahmins, the Aryan priests, but it came to serve as a rallying point of anti-Brahminical reformations. While the Brahmins chanted to Aryan gods around sacrificial fires; one, Gautama Siddhartha meditated under a tree. It was a pipal tree, or the 'bo' tree, the Indian tree of knowledge. It was there that he duly (ca. 500 BC) received the enlightenment that made him the 'Enlightened One', the Buddha. (Both *bo* and *buddha* come from the same root *bheudh*, to 'make aware'.) The gist of his enlightenment was that in his search for salvation, his attempts to attain Nirvana, man has no need of Brahmin priests.

In time, however, the Brahmins adopted much of the Buddha's teachings (although never that particular part), and the pipal tree was absorbed into Hinduism. Even today, even in Kenya, there is a pipal planted in the precincts of every main Hindu temple. The boughs serve as pews for the *pritis* during Shradda and the other festivals they may wish to attend, the leaves are used in many rituals (such as formal readings of the *Bhagavad Gita)*. Some Hindus go to the temples to pay their respects to their ancestors every day, offering libations each time. The well-watered trees naturally flourish. The sapling that was planted in Kenya's oldest Hindu temple, the one that Lala Prasad, Nairobi's first confectioner, built in 1899, now shadows the historic tin-roofed shed - - though, sadly, the tree is now dwarfed by the surrounding skyscrapers.

It suddenly struck me as astounding - - that the ghosts of peoples who live on different continents should inhabit the same genus of trees. What - - if anything - - is the connection?

To even begin to answer that, one would first have to map the distribution of fig species and the veneration thereof (and also the veneration accorded to other sorts of trees). Even discounting modern propagation methods, many species of fig are widely spread. Of the 48 species listed in the *Woody Plants of Ghana*, 12 are found amongst the 36 species listed in *Kenya Trees and Shrubs*. Five of the species in Kenya are found in Arabia/Yemen as well, and two are endemic in all three areas. One Kenyan/West African species is found in South India! Many figs are sacred in central and western Africa: *F. thonningii* specifically is described as sacred in Nigeria, just as it is in Kenya. The sycamore fig was associated with several Egyptian deities (its fruits have been found in tombs dating to the first dynasty), and was specifically sacred to Hathor. It is perfectly understandable that a milky-sapped tree should be associated with that bovine goddess who held the moon between her horns. Only the Semitic peoples seem to have been ignorant of the fig tree's remarkable powers. Although the fig is mentioned in both the *Bible* and the *Qur'an*, there is nothing to indicate that it as in any way specifically revered. When Adam and Eve made their aprons out of fig leaves they were merely being practical, not practising any ritual.

Concomitantly, it would also be necessary to identify the ritual use of different parts of the various fig trees. The Meru *et al.* use the dry dust of decayed *Mukuyus* to protect people from being swept away by water, and they burn the bark in aromatic purifying fires. The Maasai use the latex of their *rititi (ol-endeti)* to make a line over which cattle stepping will be protected from disease when an epidemic is ravaging the herds. The leaves of the pipal are used in Hindu rituals. But many more details are needed to determine if there is any significant correlation.

Different parts of the different fig trees also have medicinal uses. Some may verge on the ritualistic, but others are clearly curative. The bark of the *Mugumu*, for instance, is boiled up by the people here to make an extract which is given to infants suffering from diarrhoea, while - curiously contradictorily - the white inner bark is chewed by older people as a laxative. When one reads the accounts of the medicinal uses of figs in West Africa, the genus seems to comprise a whole medicine cabinet.

It would also be necessary to look closely at the other practical uses made of the fig species, apart from their general ability to conserve water and to provide shade. In various parts of Africa, the different parts of the fig trees are used in many ways. Not only are the more succulent fruits generally eaten, fresh or stewed (or even brewed into beer), but the tender fresh leaves of certain species (notably the unappetizing-sounding *F. glumosa*) are sometimes cooked. A young Maasai-Mukogodo told me that his people chew the latex of F. *glumosa* like gum, slitting the bark and letting the latex coagulate for several days until it becomes red; I tried some later and it was pleasantly sweet. Even the young aerial roots of species such as F. *capensis/sur* are relished as a delicacy in some places. They do look like pink spaghetti. (I have nibbled on the worm-like new roots of the *mugumo* and find them perfectly palatable.)

Several species' leaves are used as animal fodder, since the tree is evergreen even during droughts. Other species have such scratchy leaves they can be used to smooth down wooden utensils, masks and sculptures. One West African species, *F. asperifolia*, is known, even in botanical books, as the sandpaper tree and its leaves apparently do contain sand, minute particles of silica. (In Kenya, however, that use is made of, and that common name given to, another rough-leaved tree, *Cordia ovalis*.) The latex of the stickier species is traditionally used in ingenious ways, from mending clay pots to (when mixed with the powdered bark of the same species) filling tooth cavities. Kimutai, who makes arrowheads in his spare time, says that the Kipsigis use the latex for gluing feathers to arrows. Hereabouts, as in many places, the latex of the *mukuyu* is

used - unfortunately - for ensnaring small birds. (As evidence of the latex's stickiness, I still have some specks on my spectacles.) The bark, as Kimutai showed me, can be stripped off as twine (our tomatoes are now all tied up with *mugumo* string) as well as beaten into cloth. Only the wood itself is of minimal use, for it is very soft. Branches can be hollowed out as troughs and mortars, honey-bee hives and carved into crude stools, but in Kenya only the vallis fig is deemed of even the least commercial worth for carpentry. Which is just as well for the future of the trees.

Only with far more detailed botanical and ethnographic data would one be able to (perhaps) determine if the veneration of certain fig trees is an excellent example of parallel cultural evolution or a fascinating hint of some pre-historic Indo-African contact - - or simply the whimsical preferences of two different lots of ghosts.

Cynthia Salvadori, Box 477, Nanyuki.

CROMBEC ROOSTING, NDARA RANCH

Visiting the Tsavo area in September 1990, we were privileged to watch, on three successive nights, a pair of Crombec *Sylvietta brachyura* settling in to roost for the night.

It came about as follows: the soakage area for the lodge sewage system on the east of the Lodge is always green and the foliage denser than in the totally unwatered areas. In addition, the lodge rubbish dump is nearby, both of which facts make the bird activity here a little more vigorous than elsewhere. We were sitting quietly on the first evening of our stay just at sundown, when we became aware of a pair of Crombec foraging in the canopy above.

This continued for a few minutes, when suddenly and quite determinedly, one of the pair flew to a small bush of slim rising stems with very scanty foliage, hopped through and out onto one of the more peripheral stems on the opposite side which immediately sagged ominously outward until the bird on it was well clear of the bush and right out in the open, some two metres above the ground. The bird settled immediately, crouching very low and looking slightly to the left. It never moved from this position throughout all that was to follow, until the last few moments of the third day on which we watched them.

Very soon after, the second bird took up position right up alongside the first, but facing in the opposite direction, so that they were head to tail. This second bird looked mainly to the front, but did take notice of passing insects following them with its eyes and head, but totally ignoring us, sitting just five metres away.

It was just 6.15 pm, and though late, we hoped it would allow us a photograph. I ran for the camera and flash equipment, hardly daring to hope that they would remain. However, they did and we exposed a couple of shots without much hope of them being clear since it was really too dark to focus properly. The subjects of all this activity never moved, even when we approached to within four metres.

The second evening, we were passing even later and decided to look in 'just in case' they were there again. To our delight they were, and in exactly the same position, head to tail, swinging gently to and fro on their very slender perch.

Realising that our previous photographic efforts were unlikely to have been successful, on the third and last night we arrived on site in much better time and, as we thought, fully prepared.

Again we were able to witness the settling in process, and having given them time to adapt to us, we moved cautiously in. They took no notice. As they were so small, we decided to get right in close, that is to about three metres. The birds never moved. Indeed, they did not even move their heads to watch us. However, in the course of what followed, the bird facing away from us obligingly turned through 180 degrees when both birds faced the camera !

The saga then began. the flash failed to work - batteries apparently exhausted. I withdrew and obtained more. We set up again. Still the flash would not work and had to be taken down again and readjusted. Success at last. We exposed half a dozen pictures and withdrew to our original position, when the obliging bird turned back to its head to tail position and we left them on their twig for the night.

It is interesting to speculate on what they found so desirable about this exposed roost. That it was safe from climbing predators is clear, as anything trying to approach along the twig would cause a major disturbance but what of aerial ones?

Perhaps their safety lay in their complete immobility and the fact that their outline as desirable prey being distorted by sitting very close together head to tail.

Geoffrey & Dorothy Irvine, "Lakeside" Box 1356, Naivasha.

AN INVITATION TO VISIT MCHELELO RESEARCH CAMP IN THE TANA RIVER NATIONAL PRIMATE RESERVE

In response to enquiries at my lecture in April, the Tana Management Committee, under the chairmanship of Professor Steven Njuguna, has decided to permit small groups of members of the East Africa Natural History Society to visit the National Museums' Mchelelo Research Camp in the heart of the Tana River National Primate Reserve subject to the availability of tents. Information and maps are available in Professor Njuguna's office at the National Museum in Nairobi. The following will give you some idea of what you can expect to do and see during your visit and what items you will need to bring.

THE TANA RIVER NATIONAL PRIMATE RESERVE

The Reserve lies 160 km from Malindi in a remote semi-arid part of Kenya. Encompassing both sides of the mighty Tana, the Reserve was created to preserve the best remaining patches of magnificent riverine forests and their endangered primates, the Tana River red colobus and the crested mangabey. The variety of habitats, including forests, floodplains, woodlands and savanna, supports a wide diversity of plants and animals, almost 300 species of birds, 7 species of primates and over 20 large mammals.

In the cool forests, one can spot red colobus, crested mangabeys and Sykes monkeys. If one walks silently, bush pigs, red duiker and bushbuck may also be seen. Along the forest edges, baboon troops gather to feed, play and groom one another while warthogs and impala look on.

On game drives, one can view resident lesser kudu, gerenuk, topi, Peter's gazelles, dik dik, giraffe and waterbuck. Lions, serval cats, cheetah and civets are more elusive. The Reserve also provides dry season habitat for herds of oryx, zebra, buffalo and elephant.

The riverbank offers a peaceful place for sundowners and to watch the notorious Tana crocodiles and the plentiful hippos. As night falls, the hippos come out to graze, bushbabies begin their calls and genets visit the tents, looking for handouts.

It is a magical place, peaceful and steeped in the timeless rhythms of nature.

MCHELELO RESEARCH CAMP

Situated in the middle of the game reserve on the banks of the Tana River, a permanent research camp under the auspices of the National Museums of Kenya provides a base for resident scientists who come to study all facets of the ecosystem. When not all six researchers' tents are occupied, they are available as accommodation for members of selected wildlife and museum societies who wish to visit the reserve.

Tents are scattered around the lovely setting, situated to ensure shade and privacy. Each large tent is built on a concrete plinth with cool thatched roof and is completely furnished with twin beds, a writing desk, flush toilet, shower (cool water) and hand basin. On each tent's verandah, a full-size
gas cooker/oven, sink with running water, food safe and table with chairs are provided. Cooking gas is included. Lighting is solar, and fresh, safe drinking and bathing water is piped to all tents from the camp's well. One refrigerator and one freezer serves the camp, and laboratory/library and meeting bandas are used for group gatherings. The price per person per day is K.Sh.240/-. Accommodation will be limited to the number of tents available and will probably be not more than up to four at any one time.

What you will need to bring:

In addition to food and beverages, it is suggested that you bring the following: a cooler with ice packs; cooking utensils: crockery and cutlery: dish cloths; drying up cloths; washing up liquid; matches, toilet paper; soap; a torch; insect repellent; towels; bed linen and blankets. (One set of utensils, crockery, cutlery and linens are available for hire.) Nights can be cool so a light pullover is recommended.

Things to do:

Walks through the Mchelelo forest, to the south of the camp, where the major portion of the scientific studies are conducted is the best way to view the primates and the majestic forest vegetation. Bird walks through Guru forest, to the north of the camp, take you through a variety of habitats harbouring a broad diversity of bird species and to viewpoints along the river to see the hippos and crocodiles. When Pongi Pond is full, it provides a rookery for many species of water birds. (Guides for nature walks in Guru forest are required due to the presence of buffalo and hippo.)

Game drives around the reserve are most pleasant and productive in the early mornings and late afternoons. Boat trips of various lengths can be arranged down the river in dugout canoes, water level and hippos permitting.

In the evenings informal talks by resident scientists may be given by prior arrangement.

****

The road from Malindi to camp is not tarmac and is sometimes impassable during the rainy seasons. A 4WD vehicle or a saloon car with high clearance is recommended at all times.

An airstrip is situated just outside the Reserve and is usually in serviceable condition. However, a lift to camp would have to be arranged.

Booking through:

Prof. Steven Njuguna, Attn. Ms Margaret Omoto,
Biological Resources Programme,
National Museums of Kenya,
Box 40658, Nairobi.

Telephone: 742161/4
Telex: 22892

All proceeds are used to support the camp and research.

Barbara S. Decker, Biological Resources Programme, National Museums of Kenya, P.O. Box 40658, Nairobi.

REVIEW

ON SAFARI - 40 CIRCUITS IN KENYA

By Philippe Oberle - Published by the author.

Phillipe Oberle has shamed us all, but having dispelled all notions of lost opportunities and wasted weekends, go out and buy this book. After just over five years in Kenya he has produced a guide to 40 different safaris which will open the eyes of the most complacent Kenya residents. Most of the details have been published in the *Nation* and this is compilation which will repay its purchase over the first weekend. The book covers a range of one, two or three day safaris, giving the most detailed descriptions of often difficult routes which turn their following into real voyages of discovery.

The author has directed his book at foreigners living in Kenya, Kenyans and visitors coming back for a repeat visit and the background information he gives as each journey unfolds is sufficient to interest and enthuse all these categories. In his introduction he counters those critics who have accused him of popularising secluded and beautiful parts of this country by arguing that only by being visited will they be truly protected. He cites the promotion of Longonot to National Park status as an example and urges visitors to travel to Kakamega forest to help stem agricultural encroachment by their continual presence.

The introduction to this book contains splendid information on maps, conversion tables for distances and altitudes and a comprehensive bibliography. It then launches into the description of 40 + safaris which are remarkable for their wealth of incidental information as well as for their accuracy. There are particularly interesting essays prefacing the route notes taking one round Machakos and Nyeri which greatly enhance the journey and on one which we tried out, the predictions of Chandler's mountain reedbuck on the summit proved quite correct.

The route notes are calibrated with the use of a car milometer and are very precise. Details are often included just to reassure those following the route that they are on the right track, "a rough road on the right - don't take it"; "a pond on the right"; "on your

left the Saint Peter Anglican church" and at least one golden flash of optimism "if you have booked a game ranger in advance you will find him here", as well as several delightful personal comments - "you will certainly regret leaving the bamboo forest".

Monsieur Oberle is a ferocious driver and attacks huge stretches of Kenya's roads, happily tackling circuits of 346 km (Nzaui) in a day and exhorting those who intend to do likewise to leave Nairobi very early in the morning. He had a Mitsubishi Pajero which goes faster than most other safari vehicles and some of the driving times are somewhat optimistic but it will not take long to adjust ones own driving (and walking) habits to the times recorded in the book.

Here the author guides the driver along the Mau Escarpment.

"km 91.0 Through a gap in the vegetation you will catch a glimpse of Lake Naivasha. The track follows a ridge and the view on the right stretches towards the Mara plains.

km 96.2 Here is a path coming from the right.

km 97.0 Splendid colony of Hagenia abyssinica. From their worn out appearance these trees are certainly more than a hundred years old. The flowers form mauve clusters of up to 50 cm long . . . .

km 104.7 Village.

km 106.4 Fork, turn left. The track descends to Lake Naivasha".

We tried a walk on the Maparasha Hills near Bissel which is just right for a day trip with a four hour walk in the middle. The directions were faultless although the "two small tracks hardly visible" would have been better indicated by the relatively permanent anthill and dead tree just before their turning. We also never found the water tanks at the end but the sketch map got us clearly between the maize shamba and the manyatta. From there the track led to a good parking spot, launching us on a glorious walk which we could never otherwise have found - and even at a leisurely pace we reached the summit well within the 2 h 45 min. that M. Oberle took.

This book is fun to browse through and a great incentive to escape out of Nairobi into the reason why most of us live here.

Rupert Watson.

SAMBURU - RIVER RAFTING

I have recently been working for some people who were attempting to conduct river rafting trips down the Ewaso Nyiro river. I spent 22 days during March at the Samburu Game Reserve during which time the river only contained a trickle of water and was only raftable for five days; in a 'normal' year the river cannot be raftable for more than about six weeks.

The base camp is situated next to the Samburu Intrepids Club where the trip begins and the take out point is situated past the Samburu Lodge. The total trip takes 2 h 20 mins. and the distance covered is roughly 7 km. The rafts are large oval-shaped inflatables, steered by oars and can carry between 5 and 8 people.

It is indeed an unique experience to watch the wildlife from the river and not through the window of a minibus.

The river afforded ample sightings of crocodiles in various stages of growth. A lot of juveniles were present, indicating good breeding success. On one run down the river we sighted 17 crocodiles, including some large individuals that slithered into the water just as the raft grounded to a halt on one of the numerous sandbanks. When the river is high the sandbanks are not a problem, but when the the water is low and the raft has to be got across to a different channel, perhaps running aground in the process, one has to get out and push, possibly observed by a few large crocodiles lurking in the muddy water.

Certain lodges feed their resident crocodiles; the result is lethargic crocs who wait till 6 p.m. for dinner. Leopards are baited regularly as well. In one case a leopard sat under a nearby bush, while bait was placed in a nearby tree, when the man walked away the leopard climbed the tree and sat down to enjoy his dinner. This practice should be stopped as it interferes with an animal's natural hunting instincts and behaviour patterns. A park or game reserve is supposed to protect wildlife not to modify it for personal gain.

Elephants were also very numerous, with a lot of juveniles. On one run down the river a total of 24 individuals were counted. On several occasions we came across elephants crossing the river and we had to ground the raft and wait for the herd to cross before attempting to pass them.

Monitor lizards, both the Savannah Monitor and the Nile Monitor are very common along the river. No snakes were actually seen though there had been some previous sightings of large Puff Adders around the base camp area. There was one sighting of a Plated Lizard that was looking for scraps around the mess tent. Geckos are also very common of course.

The birdlife is very prolific with all the common dry country birds being present. Green-backed Herons are very common along the river. There is a high density of Red-chested Cuckoos, who call all day long, and some could be heard calling in the middle of the night, with their never-ending call.

The insect life in this area is very rich and vast. There were two types that I found intriguing:

The "Kufamorongos" or the armoured ground cricket, the males make such a shrill whistle that it can put any cicada to shame. On humid nights they sit outside their burrows, making their shrill call trying to attract females. They are roughly 7.5 cm long, with a strong reinforced thorax and large gnawing jaws and feed on almost any edible matter. One burrow was dug out, it was 90 cm long 60 cm deep, with a diameter of 4 cm.

We also found a centipede that was brown in colour, about 5 mm in diameter and approximately 15 cm long, it was at night and it was giving off a green fluorescence, when agitated it left a trail of fluorescence. Does anybody have any ideas or suggestions to account for this peculiar characteristic in a centipede?

The Samburu - Buffalo Springs Game reserve area has a rich and varied diversity of animal life, and I hope it stays this way for years to come.

Pritpal Singh Soorae, Box 44919, Nairobi.

LETTERS TO THE EDITOR

Dear Sir,

I was interested to read about the colonies of Marabou Storks in the *EANHS Bulletin* Vol.20 (1).

I visited Kalambo Falls in Tanzania in 1983 and saw the Marabou colony there apparently flourishing. It was fascinating to watch these huge birds, so ungainly on land, soaring gracefully in the thermals above the falls.

Incidentally, this is a very interesting area to visit if you can survive a rough landrover journey and are prepared to camp. The falls themselves, said to be the longest single drop in Africa (estimates vary from 230 - 400 m), are unforgettably spectacular and it is possible from there to get to the neglected Stone Age site on the Zambian side of the river. Nearby, on Lake Tanganyika is the ruined German fort at Bismarckburg, pockmarked with World War One bullet holes.

Rachel A. Nicholson, St. Luke's Hospital, Anua, Uyo, Akwa Ibom State, Nigeria

Dear Sir,

Ref. Coprophagy in African Elephants

Please allow me to propose a possible theory concerning coprophagy in African Elephants.

Elephants harbour in their intestinal tract certain micro-organisms, both protozoal and bacterial, unique to elephants. When passing liquid faeces they may excrete some colonic fluid containing living protozoa which are essential to the digestion of rough food.

From studies on other species it is known that the number of protozoa increase on rough fodder whereas the number of of bacteria decrease. Also the higher the number of protozoans in the digestive tract, the lower the production of methane.

To ensure that all members of a group of elephants digest efficiently and are in good health, they may exchange protozoa by excreting some colonic fluid together with the faeces. This subsance would have to be taken by other members of the group at once because these protozoa are anaerobic and would remain viable in the liquid for only a very short time once excreted.
In a tightly packed dung ball they may survive somewhat longer.

The colonic fluid as such may serve as a stimulant and provide a basis for the right medium in the digestive tract of others. Passing on saliva would have a similar effect. Whether some colonic protozoa regularly survive the passage through the colon is not known but is likely. Elephants do not digest their protozoa as ruminants do.

It would be somewhat difficult to prove my theory in the field but, nevertheless, it should be possible.

Ingeburg Burchard, Box 14426, Nairobi.

Mr R. Lowis comments: A further question - how do elephants get 'squitty' at the same time - is it voluntary - or due to diet? I suggest that Africans living in elephant areas be asked.

Correction: In Mr Lowis' article on this subject **COPROPHAGY** was spelt wrongly throughout, though correctly in the contents. Apologies for this error.

Editor.

MEMBERSHIP:
This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the Joint Society-National Museum Library (postal borrowing is possible); a copy of the EANHS BULLETIN every four months and a copy of each Journal published during your period of membership. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

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This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS BULLETIN), P.O. Box 24734, Nairobi, or P.O. Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs can be published.

SCOPUS:
The Ornithological Sub-Committee publishes this bird journal five times a year, cost Kshs.100 per annum. All correspondence to D.A. Turner, P.O. Box 48019, Nairobi, Kenya.

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A SHORT NOTE ON THE PIPUNCULIDAE (DIPTERA) OF KENYA

Although insects generally receive little attention in the *Bulletin* , they nevertheless comprise several groups of interest to the naturalist. For the last eight years, I have been fascinated by an obscure group of flies, named the big-headed flies or Pipunculidae, after the Latin diminutive *Pipunculus* meaning 'little melon or pumpkin' (Cameron, 1974).

Pipunculid flies are usually small, dark and inconspicuous flies, mainly recognised by the large compound eyes occupying most of the large hemispherical head, hence the name (Fig. 1). They are looşely related to the larger and brightly coloured hoverflies (Syrphidae) but can be readily differentiated from the latter by the large head and by some slight differences in the wing venation (like the absence of a vena spuria). Although more obscure than their bigger nephews, they are also excellent hoverers.

Adult pipunculids are no flower visitors but are more often found hovering above or resting on grass stems. They only live for a few days and apparently feed on honeydew. The larvae have however, an interesting life-history in that they are parasitoids of plant and leaf hoppers (Homoptera, Auchenorrhyncha). The adult female pipunculid can sometimes be seen hovering like a miniature hawk, above a suitable habitat for homopteran nymphs and then suddenly dropping and catching a nymph between the legs. Via a piercer-like ovipositor, an egg will be inserted through the soft membrane in between the abdominal tergites. The larva (usually only one per nymph) will feed on the abdominal tissues of the nymph for about eight to ten weeks and eventually emerge (causing the death of the nymph) and pupate on the ground or attached to the vegetation. Although there seems to be some host specificity, records of parasitism for African Pipunculidae are extremely rare. I am only aware of one record by Kirk-Spriggs (1988) for *Tomosvaryella singula* puparia found in rice paddies infested by *Cofana* species (Cicadellidae).

Approximately 900 species of Pipunculidae are reported world-wide of which D. Elmo Hardy in his catalogue, listed 133 for the Afrotropical Region (Hardy, 1980). Since then, an additional 5 new species were described for this region. So far, the pipunculid fauna of Kenya

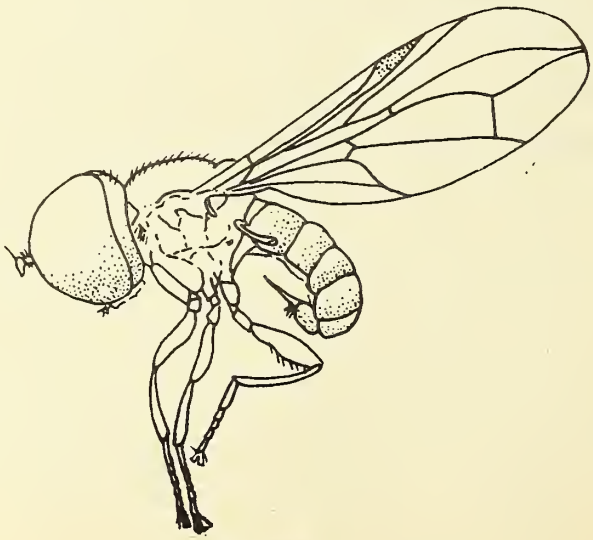

Figure 1.

is very poorly known. Ten species were reported for Kenya with certainty. This was mainly material collected in the thirties and forties by H.J.A. Turner and van Someren at Naivasha, Meru and Ngong. As a matter of fact, several of these specimens were used as type material in descriptions of the new species by D.E. Hardy. A recent revision by myself of the Afrotropical representatives of some genera like *Cephalops*, *Wittella* and *Beckerias* resulted in an additional 4 species for the Kenya fauna, including one new species based on material from Karura Forest, Nairobi (the description of the new species will be published shortly in a general revision). Thus a very preliminary list of Kenyan Pipunculidae can be given, including the following 14 species.

Genus *Eudorylas* Aczel
E. abdominalis (Loew)
E. aethiopicus (Hardy)
E. cupreiventris (Becker)
E. inornatus (Hardy)
E. meruensis (Hardy)
E. mutillatus (Loew)

Genus *Tomosvaryella* Aczel
T. subvirescens (Loew)

Genus *Cephalops* Fallen
C. bellulus (Hardy)
C. cautus (Hardy)
C. navus (Hardy)
C. obtusus (Hardy)
Cephalops new species

Genus *Wittella* Hardy
W. caandidula (Hardy)

Uncertain generic position
Pipunculus ? *flavicrus* Rapp

Momentarily a systemic revision of the Afrotropical representatives of the genus *Tomosvaryella* is in progress, which will undoubtedly lead to additions to the above list.

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DISTRIBUTION OF SEEDS THROUGH MAMMMALS IN AFRICA

"Some seeds are much more likely to germinate after passing through the alimentary canal of an animal. In this process, the seed coat is softened, and its permeability increased. But for *Acacia tortilis* seeds, the digestive juices may have an even more important effect. This tree is one of the commoner species of the drier parts of Africa and its pods are very rich in protein. Goats, gazelles, and even elephants seek them and eat

them in large quantities. *A. tortilis* seeds collected from faeces of a variety of large mammals showed germination rates of 11 to 28 %. This rate seems low, but it is much higher than the 3 % rate for seeds which were treated experimentally to soften their coat, but not eaten by mammals. The explanation is believed to be that most seeds are infested by beetles of the family Bruchidae, whose females lay their eggs in the young pods. The beetle larvae continue to grow after the pods fall to the ground, and eventually eat the embryo of the seed - thus preventing germination. But if seeds are eaten by mammals before the beetle larvae have had time to eat the seed embryo, the mammalian digestive juice kill the larvae, and hence those seeds can germinate. This fascinating situation was discovered only as a result of very careful observations, and illustrates how complex the interactions between species can be."

Original text from Pomeroy, D. 1986. In service, Tropical Ecology, p.117. Textbook for African Universities.

In every scientific textbook worldwide, passages such as the above are to be found with the positive conclusion that larger African mammals distribute seeds, passed in their dung, with a higher germination rate.

But these observations contain a fundamental error. They do not reflect the reality in Africa and have to be reviewed.

Trees and bushes, including *Acacia* spp. produce much more seed than is necessary for their own reproduction thus, the surplus has to be prevented from germinating. Naturally some ways are given: Insects (such as the already mentioned Bruchid beetles) feed on them. Birds feed on them. Mammals eat them.

In mammals it is necessary to distinguish between indigenous and introduced fauna. According to Hoffman (4) it is inadmissible to treat African wild ruminants in the same way as domesticated ruminants as far as their digestive systems are concerned. Consequently it has to be dealt with separately between wild animals (ruminants and monogastric species) and domestic animals (ruminants).

Wild ruminants digest much more intensively than hind-gut fermenters due to the structure of their digestive system so the rate of intact excreted seeds must be infinitely low. If a scientist does not pick up excreted seeds, the quickly dehydrated dung containing the seeds remains on the ground until termites convert it. That process usually starts from the third day onwards after excretion but can happen even after one year (2). In the meantime seeds cannot germinate because of lack of moisture and before enough water becomes available for germination, the termites become active.

Dung pellets from wild ruminans are tightly packed and properly sealed with a hardened mucous skin. They remain intact until dismantled by termites. Specific weights are from 0.8 to close to 1.

Monogastric animals such as elephants have a higher rate of only partially digesed seeds in their excrement. But the decomposition is the same as in ruminants' dung. Moreover, the dung of monogastric animals is preferred by termites (2). Termites are mainly active during dry seasons but can be found dismantling dung even during wetter periods.

During the rainy seasons all wildlife dung is taken by dung beetles, usually within 24 hours of excretion (3). Depending on the species of beetle, they either use the dung inclusive of seeds or sort all irregularities from the dung such as seeds and leave them exposed on the soil surface (5), where they are certainly taken by birds. The suggested mechanism from Waterhouse (5), that germinating seeds may take easier root on places where dungbeetles have loosened the soil through tunnelling is still unproved for Africa.

On the rare occasions where wild animal's dung is deposited on places without dung-eating termites, dungbeetles and soil, e.g. on huge rocks or on places artificially created by scientists, the dung becomes completely decayed by fungi usually in the second following rainy season.

Germination of seeds in dung passed by wild animals can be expected:

1. If seeds are protected by tannins from being attacked by microfauna/flora either in the alimentaray tract of the animal or on the soil suface. So protected seeds are not taken by termites.
2. In environments with a high ground water table where termites and dungbeetles are absent due to lack of nesting space (e.g. Amboseli/Kenya nowadays and on the shores of lakes and rivers.
3. If pastures are burnt. The dung of wild animals which eat the green shoots which shoot up after burning during dry seasons can be refused by termites. Dungbeetles are absent at that time.

The pre-prepared seeds in excrement from domestic animals are able to germinate. Their dung is easily water soluble. Pellets collapse readily from some soil moisture. The specific weight is around 0.7. The dung is not readily approached by termites or dungbeetles (2). Excreted intact seeds can germinate as soon as water becomes available.

The dung of domestic animals also contains some fungi but none with the ability of decay worth mentioning. The dung becomes dusty and the seeds exposed.

The obviously negative effect of the distribution of seeds by domestic animals is the covering of pastures with bush thus reducing grazing capacity. Also bushes and trees shade the ground preventing grass growth finally leading to massive erosion and uprooting of trees (1).

It has also to be considered that the nitrogen-rich dust from domestic animals' dung accumulates around bushes. Bushes with such an underlayer of soft material provide ideal breeding grounds for Tsetse fly (*Glossina* spp.).

In summary: There is very little distribution of seeds through dung from wild mammals.

Distribution of seeds through dung from domestic animals has unwanted side-effects.

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THARAKA GAME AND BIRD NAMES

In 1987 during the collection of historical data on hunting in colonial Kenya, I undertook the collection and publication of vernacular names for game animals in Kitui and Meru districts. This included the collection of animal and bird names in Kitharaka. I was especially fortunate in collecting a long list of bird names and it is hoped that this may stimulate the collection and collation of vernacular names in other regions of Kenya by East Africa Natural History Society members along lines already begun by staff at the National Museums of Kenya ornithology Department.

The animals were identified using J. G. Williams *A Field Guide to the National Parks of East Africa* (London: Collins, 1978) by Mr E. M'kairanya and Mr J. Mugao Kibunjia assisted by J. Mucee Kairanya. Question marks (?) indicate uncertainty on the part of the informants or the compiler.

The birds were identified by a group of young men and boys at Mukothima Market, Kanjoro sub-location, North Tharaka, Meru District. These names are keyed to the Plates and Figures in J. G. Williams and N. Arlott A *Field Guide to the Birds of East Africa* (London: Collins, 1980).

English	Tharaka
ANIMALS	
Bat	Karere
Bushbaby	Kinoko
Mangabey	Nthanga
Aardvark	Nkurukuru
White-tailed Mongoose	Nthegere
Black-tipped Mongoose	Murunguru
Banded Mongoose	Nthengere
Porcupine	Nchege
Hedgehog	Karianyungu
Buffalo	Mbogo
Elephant	Njogu
Rhinoceros	Mpuria
Zebra	Irubui
Hippopotamus	Nguu
Baboon	Iguna (ma - pl.)
Monkeys (all)	Nkima
Cheetah	Itanga (or Gachuni ?)
Caracal	Kiuru (?)
Lion	Munyambu
Leopard	Ngo
Aardwolf	Mbwe (?)
Hyena	Mbiti
Jackal	Mbwe (or Kiuru ?)
Civet or Palm Civet	Nthimba (or Githuri ?)
Genet	Rwenge
Warthog (Foresthog)	Ngiri
Bush Pig	Nguruwe
Hyrax	Inyore
Giraffe	Ntwiga
Bush Duiker	Nthia (?)
Grant's Gazelle	Swara
Steinbok	Nthia (?)
Dikdik	Nthiu (or Nchwara ?)
Waterbuck	Kamani (or Mparo ?)
Bongo	Ntaratari (?)
Oryx	Mparu (?)
Kudu	Njai (or Surwa ?)
Eland	Surwa (or Nkondi ?)
Bushbuck	Kurungu
Hare	Kanyugu
Rat	Ikindu
Squirrel	Nduru
Galago	Nkwanyanyu

BIRDS

Plate	fig.	English	Tharaka
		Ostrich	Nyaga
2	11	Hamerkop	Nkune
	12	Goliath Heron	Ntunda rukingo
3	3	Hadada Ibis	Kagondu karuji
		Ducks (all)	Mbata
4	1	Cape Teal	Nkuru
5	1-3	Vultures (all)	Nderi
	6	Nubian Vulture	Ntumbura marathe
6	5	Long-crested Eagle	Rwigirwa nkanga
	4	Bateleur	Ntuga
9	19	Helmeted Guineafowl	Nkanga
	18	Vulturine Guineafowl	Nkanga rachiri
	17	Crested Guineafowl	Nkongoroto
	12	Yellow-necked Spurfowl	Gikware
	6	Red-winged Francolin	Kaumbuki
10	14	Crowned Crane	Mpung'au
	13	Kori Bustard	Nkware caguambi
13	13	Green Pigeon	Ituriki
	12	Wood Dove	Kaugi
	6	Red-eyed Dove	Icankuru
	7	Ring-necked Dove	Ichea
	4	Namaqua Dove	Kaugi nthuria
14	9, 10	Mousebird	Muchukuri
	11	African Scimitarbill	Muthegeru
	1	Emerald Cuckoo	Ikomanjoka
	3	White-browed Coucal	Ciamuthuntu
	7	African Hoopoe	Mugao wanyoni
15	1	Go-away Bird	Mbao
16	1	Brown Parrot	Isweri
	10	Giant Kingfisher	Nkirima
17	all	Kingfisher	Nkirima
18	all	Bee-eaters	Muongoro
19	12	Grey Hornbill	Ikiru
	10	Von der Decken's Hornbill	Ithuku
	6	Red-billed Hornbill	Ikothi
20	4	Verreaux's Eagle Owl	Ntundu
	3	Spotted Eagle Owl	Kietho
	6	Nubian Nightjar	Kigoro
21	all	Swifts	Nthunguru
22	5	d'Arnaud's Barbet	Kibututi
23	11	Bearded Woodpecker	Nthegenki
29	1	Paradise Flycatcher	Kanyiri
40	1	Paradise Whydah	Mwanguku
	8	Purple Grenadier	Karimba
41	1	Slender-billed Weaver	Gishue
42	10	Chestnut Weaver	Murugoncho

Plate / fig.		English	Tharaka
43	5	Red-billed Quelea	Kanuku
44	1	White-browed Sparrow Weaver	Ngocho
46	1	Drongo	Gitari
	5, 6	Oxpecker	Nthiri
48	8	Pied Crow	Nkunguru
47	3	Blue-eared glossy Starling	Igirui
		Superb Starling	Nchoi

Principle Informants:

David Kirema c/o Mukothima, Meru.
David Muthoni
Daniel Murithi

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A STICK INSECT IN SAME

In early September 1990, while staying in Same (between the North and South Pare Mountains) in north-east Tanzania, I stumbled upon what was by far the longest stick-insect that I have ever seen. It was clinging to the sides of some cement steps, and at first I mistook it for a growth of leafless twigs. Not until I saw that these grey twigs were perfectly symmetrical and growing out of nothing did it dawn on me that I might be looking at a living creature. I showed it to some of my colleagues, members of local women's groups, and they were only convinced of its real identity once they had frightened it into moving. Like me they were astounded by its size, and all of them declared that they had never seen anything like it before. They were, indeed, somewhat alarmed, and killed it with a few well-aimed rocks.

I had all but forgotten about this incident until recently, when I came across the following statement in last year's edition of The *Guinness Book of Records* : (p.40) "The longest insect in the world is the Giant Stick Insect *Pharnacia serratipes* of Indonesia, females of which have been measured up to 330 mm (13 inches)". How I wish that I had made use of a tape measure and camera that day! I could swear that my Same stick insect was much the same size as the longest of its Indonesian cousins. It was certainly much longer than the norm - or what I suppose to be the norm in my ignorance of the relevant entomological records. I would be very happy for someone to write and enlighten me. Otherwise, and not just for those with an eye to the record books, I would recommend a visit to the hostel recently opened by the Roman Catholic Diocese of Same. The hostel buildings enclose a small garden, host (one hopes) to the relatives of a very long, but unfortunately very dead, stick insect.

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SACRED GROVES AND CULTURAL ROOTS

Be the past what it may {see *Eanhs Bulletin* Vol.21(2)}, what is the future of sacred trees?

The Hindus will certainly continue to revere pipals, for the Indians have a remarkable ability to hold on to their heritage. Even today in new African cities, Hindus are performing the same nature rites that their ancestors did in the Indian forest groves millennia ago. This is in marked contrast to Europeans, who often have to delve into the complexities of linguistics to even get a clue as to what their ancestors were doing. But when one does, one discovers a remarkable affinity with Bantu beliefs. In England, for instance, the oak was once a sacred tree where at Celtic priests prayed. It was almost identical to the 'strong' mugumu as a dendritic representation of strength. The words 'tree' and 'true' are both derived from the same Indo-European root *deru* meaning 'solid' or 'firm', and so is the name of *the* tree itself in some Indo-European languages. An oak is an oak in English now, but in Greek it is *drus*. And the Greek *drus* were inhabitated by their spirits, the dryads; they like the druids of yore, the celtic priests, still endure in the English language.

Unfortunately, the 'mighty oak made — unlike fig trees — mighty good timber. A great many church beams (and millions of others) were hewn out of oak. Only now as people in the industrialised western world are reviewing their place in the natural scheme of things, are steps being taken to protect 'nature', including the oak tree. But it may be too late to resuscitate its sanctity.

Many traditional cultures are teetering on their roots between two extremes exemplified by the ritually conservative Hindus and the iconoclastic Europeans. The traditional cultures are unbalanced because flourishing rituals have been crudely chopped off and they starved because the fertilising beliefs have been eroded. The majority of early Christian missionaries to Africa were the sort who believed that if one called a worshipful power by a word other than God, it was some other superhuman power; that if one called God by a name other than Jehovah, it was a different god. (Even today, the average European Christian sincerely believes that Muslims, who worship the deity called Allah in Arabic, are worshipping an alien deity, not just speaking of God in a different language.) Thus in colonial days, African traditional beliefs were despised as 'pagan', and old religions were uprooted, some completely eradicated.

Yet in certain places compatible *modii vivendi* have evolved. In Madagascar virtually all the population is now Christian or (a small minority) Muslim. Over 90% of the land has been deforested within the past century, as the conversions were made. But one can still see dark patches on otherwise barren hills, above the meticulously cultivated valleys. These are patches, often pathetically small, of indigenous forest. They have survived because such sites are still sacred to the Malagache ancestors — even though the younger ancestors are now buried in tombs with big crosses. In West Africa, the powers of the traditional "juju" are still so potent that no one dares profane a sacred site or cut a hallowed tree.

Since Independence, Kenyan leaders have continually called for a strengthening of at least some aspects of traditional culture. There is now even a Ministry of Cultural Heritage (combined with Home Affairs). One often sees references to cultural revival in speeches reported in the newspapers — and in the costumed 'traditional dancing' that is part of any public celebration. A good start was made by Jomo Kenyatta, who was not only a born Kikuyu but also a London-educated anthropologist. Although better known as Kenya's first president, he was also the author of *Facing Mt. Kenya*, a classical ethnological study of his own Kikuyu people.

The Kikuyu say they are descended from a primordial couple, to whom Ngai, the god who lives on Mt. Kenya, gave the lands southwest of the mountain. In the centre of this land was

a grove of very tall trees called mukurue *Albizia gummifera* and in their midst a fig tree. There Gikuyu and Mumbi made their home and raised their nine daughters, progenetrixes of the nine Kikuyu clans (the tenth was founded by a grand-daughter; then, as now, men were rather irrelevant). Just as the pipal had served as a rallying place for anti-Brahminical activities, so the Kikuyu's sacred fig trees, the meeting places of the elders and the abodes of the ancestors became the foci of anti-colonial sentiments. Dedan Kimathi, whose stronghold was the Aberdare forest described in a letter to his brother how Ngai had come to him in a dream and taken him to a place in the forest where there were "many big rocks out of which clean springs were flowing... and mugumu tree which was bigger and higher than all the other wild fig trees in the forest, a tree that was like the father of all trees. And I rested my hand upon it. When I did that, Ngai spoke to me again and said, "this is my house in the forest, and here I will guard you'.... from now onwards no person should pass a mugumu tree without praying, otherwise he will anger Ngai and be destroyed".

As it happened, Dedan Kimathi was destroyed. He was captured by a group of (Kikuyu) troops as he emerged from the forest to seek food. His favourite 'prayer tree', the mgumu he had identified as the one that Ngai had shown him, fell down shortly after he was executed. Conversely, at Thika there was a huge fig tree, said to be over a century old. Legend had it that a Kikuyu soothsayer, Mugo wa Kibiru, foretold that before the tree died, Africans would have obtained their freedom. Throughout the colonial period, the legend and the tree stayed alive and shortly after Independence, the great tree died. But the trees on the site where Gikuyu and Mumbi built their house still stand. During Kenyatta's presidency, Mukurue wa Nya-Gathanga, the 'Mukurue of the building site' was made a national monument. It is now properly protected, and signposted on a road near Nyeri.

The Meru, the Embu and the Kamba all have sacred groves. But the best known are the *kayas* of the Mijikenda. These are also protected, providing a refuge not only for traditional culture but also for the indigenous flora and fauna along Kenya's coast. The other year I was looking into the Digo kayas, on the south coast. I made contact with the elderly priest of the Tiwi Kaya and he — after all due offerings were made — escorted me into that mini-forest himself. He showed me the site of the sacred spring, where water only surges forth at certain times, one of which was not just then, and the mysterious rocks, some quite hidden under blankets of fallen leaves, where offerings were made.

Although I was not 'seeing' fig trees at the time, I would certainly have noticed a particularly large, densely foliaged tree. Given the fact that the kayas were not simply small ritual sites but refuges large enough for entire communities of people and livestock to hide when Maasai raiders threatened, it would have been essential for each kaya to have a permanent supply of water. I suspected at the time that I was not - - quite understandably - - taken to the *sanctum sanctorum*. I am quite sure that the heart of each Mijikenda kaya must be a spring. And in retrospect, I suspect it has a fig tree growing there - for the Mijikenda are a Bantu people, closely related to the Meru.

The stout old priest of the Waa Kaya was ailing - he seemed to be suffering from gout. However, he gave me, the Digo secondary school student who was my interpreter and his friend permission to go into the sacred grove on our own. The schoolboys knew the entrance; they had not long before watched the elders file in for a ceremony, but once in we very soon lost the track - as I am sure the priest knew perfectly well we would. We ended up crawling around the dense undergrowth on our hands and knees. My interpreter, whose declared (to me) ambition in life was "to be an intellectual", and his friend got such a case of nerves that they were visibly shaking. I called the eerie expedition off, not wishing to be responsible for any heart attacks. Clearly the sacred groves are well protected when beliefs in the powers therein are still so strong.

Unfortunately, members of alien 'ethnic communities' do not have the same scruples. The kayas have been encroached upon for firewood and building materials by non-locals. The same has happened here. It would be reassuring to see national respect for traditional beliefs enhanced and protection for sylvan sites accorded all over as has been done for Mukurue wa Nya-Gathanga. If not, such sites may not last much longer. During this last drought, the (Christian) president of Kenya called on all citizens to pray for rain, by all traditional means. The wazee of this area had to go to Timau, for too much sacrilege has been committed here. I have seen two mugumos with their trunks chopped off. I asked how such a thing had been allowed to happen. The crime had been committed by some strangers who came with a motor vehicle. They did the deed on a Sunday, when the people here were all worshipping inside the local church.

Cynthia Salvadori, Box 477, Nanyuki.

PEARL SPOTTED OWLET MOBBED BY GREY-BACKED FISCALS

Perhaps one of the most frequent victims of small bird mobbings is the Pearl Spotted Owlet *Glaucidium perlatum* , hence a write up seems hardly necessary unless there are any unusual features.

The mobbing we witnessed recently took place in the Acacia trees on the north side of Oloidien Bay, otherwise known as Little Lake Naivasha. This area is typical of the open, short grass, light Acacia forest areas apparently favoured by this attractive little owlet. The attackers were no less than ten apparently adult Grey-backed Fiscal Shrikes, and the time was 5.15 p.m. on a hot, dry and dusty afternoon. Both species are common here, though the owlet is more frequently heard rather than seen, calling both by day and night. In this instance, there were no other birds involved in the mobbing but the ten shrikes. This is not so common, in our experience.

The attackers approached from all sides, one or two at a time. The rest scolded, flew from branch to branch, and waved their tails in an agitated manner from side to side. The victim stood his ground, which seemed unwise in the face of such overwhelming odds, although his body is larger than that of the shrikes whose tails make them seem bigger birds.

Sitting firmly on the branch, he responded to each attack with head swivelling rapidly to and fro, ducking as necessary; surprisingly, no feathers flew. However, after a few minutes of this the owlet dived to a lower bush which turned out to be a Prickly Pear, perhaps deciding discretion to be the better part of valour and we expected the shrikes to leave him alone, but the mobbing continued as viciously as ever.

We fully expected to find a thoroughly discomfited and possibly injured bird to emerge, but not a bit of it. Our approach temporarily discouraged the shrikes and there, perky as always, sat the victim his big yellow eyes watching us intently for a moment before flying up to another Acacia very nearby where the mobbing resumed.

Now the attack certainly appeared to be pressed home, at one time the owlet was knocked over and had to hang upside down from the underside of the branch where, for an appreciable time, one of the attacking shrikes actually hung onto him from below, so that they were in suspended tandem.

If you have ever been nipped by a big shrike, you will appreciate that they have a very powerful bite. Indeed, Leslie Brown described how once when watching eagles at the nest he felt compelled to destroy a shrike that was threatening the life of an eaglet. Following this,

the owlet decided that he had had enough and flew off, easily outstripping the few shrikes that set off in pursuit.

To us the strange feature of this particular mobbing was the single species involved and the apparent unconcern of the owlet, for he could have easily flown away from the shrikes at the start. Then there was the absence of even a ruffled feather, let alone feathers flying. However, the one shrike that actually hung onto the inverted owlet certainly indicated more serious intent and not simply demonstration.

Geoffrey & Dorothy Irvine, "Lakeside", Box 1356, Naivasha.

WHITE-HEADED WOOD HOOPOES NESTING

In January 1991, whilst on a visit to Kinondoni Lodge, Mt. Kenya at the top of the Chogoria Track, a family of White-headed Wood Hoopoes *Phoeniculus bollei* were found feeding young in a well hidden and deep recess in a large *Podocarpus* sp. tree.

As usual the birds gave themselves away by their frequent and fairly regular to-ing and fro-ing through the trees. It was not difficult to find the nest tree as their frequent calling helps to keep track of them

In company with Mr John Wright we watched the feeding for not less than an hour and a half and noted that more than two birds took part in the provision of food. That is to say that this was a group effort. All the feeding birds appeared to be fully adult, but there did appear to be difference as to which birds actually presented the food, for some went rapidly into the nest cavity, whilst others apparently had to hand the offering over to a second adult who then disappeared with it into the hole. It was not possible to determine whether it was always the same birds that acted in the same manner. No faecal sacs were seen to be removed. The birds took little notice of us sitting about ten metres below and flashing our cameras at them.

Group feeding seems to be more frequent in such intensely social birds than in others. We have noted the same amongst Retz's Red-billed Shrikes *Prionops retzii* at the coast.

Geoffrey & Dorothy Irvine, "Lakeside", Box 1356, Naivasha.

LETTERS TO THE EDITOR

Dear Sir,

I am 39 years old and was severely disabled with a spinal injury suffered in 1981 whilst working as a nurse, with the result that I have next to no mobility. I have just completed my BA degree at home but because of my disability and the consequent extreme pain I continuously suffer I cannot do my Higher Degrees (BA with Honours and MA) in the subjects that I would wish to do in the normal way, because of the field work that is involved.

However, I have been given one chance of doing my Higher Degrees. Over the next 4 to 6 years I have to complete, and pass, a number of in depth research/thesis papers. For all papers, except the first, I am given a choice of subjects. With the first paper the subject is set for me. This is to show the examiners that, despite my disability, I can do the in-depth research that will be required for the remaining papers.

Because of my circumstances I am on a very restricted income and although I have a

grant, which covers three quarters of my fees, I cannot either buy books or easily get access to research libraries. Therefore, I have to try all other sources to obtain the information that I need to help to complete the papers. I have to pass all the papers but the first one is the most important of all, and it is this first paper that is causing me the most urgent problems for which I desperately need any help I can obtain.

The subject for my first paper is as follows:-

I am to do in depth research into an unidentified animal of the Likouala Swamp Region of the Congo and of other parts of Africa. The animal has no scientific name but is known to local people under a variety of names including MOKELE MBEMBE, CHIPEKWE etc. My research *must* include the following:

1. To gather all reports of the animal known as Mokele Mbembe, Chipekwe etc., I am then to try and identify the animal.

2. To gather all reports of other identified animals.

3. From all reports/information, I am to look into the possibility that Mokele Mbembe, Chipekwe etc., is a form of giant Monitor Lizard, possibly related to the Komodo Dragon of Indonesia.

4. To look into the possibility that Mokele Mbembe, Chipekwe, etc. is an age old part of the myths and legends of the various African countries.

5. The Mokele Mbembe, Chipekwe is always reported in very remote inhospitable regions, where very few Westerners have entered. I am to look into the possibility that Mokele Mbembe, Cipekwe is, in fact, an animal already known to science, that has grown much larger than normal, because of the remoteness of the area it is alleged to inhabit.

I know that I have a great deal of research to do for this first paper. But my Tutor-Counsellor tells me that the examiners have deliberately set this as a subject for the first paper, as they feel that if I can complete and pass this paper, despite my disability, I should have no trouble completing the remaining papers.

One of the very few books that my local library have been able to get for me stated that the *Journal of the East Africa and Uganda Natural History Society* 1913. Vol. 3 No. 6. carried a paper by C.W. Hobley 'On some unidentified Beasts'.

Therefore, could I please ask for your valuable help in the following ways:-

1. Could you please let me have a copy of the above paper.

2. Could you please let me have any other information that you may have about the Mokele Mbembe, Chipekwe etc.

3. Could you please let me have any information about mystery lake animals/monsters in Africa.

4. Could you please let me have the names and addresses of any Journal, magazine etc., anywhere in the world, that you feel may be able to help me with my research,

5. Could you please let me have the names and addresses of any Institute or organisation , anywhere in the world, that you feel may be able to help me with my research and any other information that you feel may be of value.

Although I know that I may be asking a great deal, I would deeply appreciate any help that you or your Members can give me with the above.

Peter Kanabar, 12 Muirfield Close, South Oxhey, Watford, Herts WD1 6LT. U.K.

The above letter was recently received from Mr Peter Kanabar and is self explanatory. He has been sent a copy of the paper 'On some unidentified Beasts' which includes descriptions of the 'Nandi Bear' as well as descriptions of a lake and river beast said to inhabit "certain of the rivers running into Lake Victoria and the lake itself", as well as other notes about the Chemosit or Nandi Bear.

Should any members be able to assist Mr Kanabar, their help would be greatly appreciated and we wish him all success with his project.

Editor.

Dear Sir,

I have had a pair of Variable Sunbirds in my garden for the last five years. They are very tame and the female roosts in the Golden Shower on my verandah at night.

They have nested several times, always near my house but, for the last two years or so, each time the eggs hatch the young are attacked and killed by a Bronze Sunbird (who only appears at this time). The first time it killed a pair of babies, male and female, when they had started growing feathers; the second time a single female at about the same stage. In between the 'variable' managed to raise a female but the 'bronzy' was around for a couple of weeks, obviously hoping to get at it. The parents always get very distressed when it is around, and definitely call for my help (once after dark) by fluttering at my window, to chase it off.

I assume that the 'bronzy' is trying to limit the population of 'variables' but I have never heard of this before. I saw the 'bronzy' in action the first time, but reached the nest too late to help. It flies against the nest, and simply pecks at the heads of the fledglings - grotesque behaviour for such a beautiful bird.

I would much appreciate views on this from people more knowledgeable than myself, with possible suggestions as to how to prevent it happening next time.

Linda Brown, Box 25198, Nairobi. (Tel. 561112).

Dear Sir,

I wonder if any of your members have visited Kaya Kinondo? It is a naturalist's delight - a patch of mature forest growing on damp coral rag immediately behind Kinondo Beach, just south of Diani.

The Kaya, like many others along the coast, is a sacred wood to the local Digo people. It is also a refuge for some of the rarer birds and small mammals which frequent coastal forest.

Immense mature trees abound, with some spectacular Mvule *Chlorophora excelsa* , enormous and aged Mkungu *Terminalia catappa* and various other typical trees of wet coastal forest such as Baobab, *Ficus lutea* and *Sorindeia obtusifoliolata.*

Like many such last havens of forest, Kaya Kinondo is alive with creatures - butterflies, snails, forest birds such as Narina's Trogon, Silvery-cheeked Hornbills and the Kenya Coastal Guineafowl. Small animals to be found there include Red-forest Duiker, Giant Squirrel, Red Bush Squirrel, Sykes Monkeys, Baboons and Coast Colobus *Guereza angolensis*.

Until now the integrity of the forest has been intact. It is bounded on one side by the beach road and footpaths disappear into its shade, used by local people for collecting firewood and cutting useful timber for household purposes.

I am writing to you because the clearing of Kaya Kinondo has begun. Survey markers have been placed in the forest and clearing of undergrowth completed in the surveyed plot, which begins on the beach.

Would it not make sense to keep Kaya Kinondo as a small forest reserve? The land cannot be used for anything - it is made up of a series of old coral reefs useless for agriculture.

Concerned people should do something before the Kaya is destroyed forever.

W.I. Knocher, Box 22759, Nairobi.

REQUEST FOR INFORMATION NESTING OF THE SCARCE SWIFT ON MOUNT ELGON

Among the numerous swifts which inhabit East Africa is the Scarce Swift, a rather small dark brown species which has a grey chin and throat and a deeply forked tail. Long known as *Apus myioptilus* , it was later discovered to have foot characteristics typical of the group of spine-tailed swifts and as a result placed in a newly erected genus *Shoutedenapus*. Although sometimes locally abundant in parts of its range in Zaire, elsewhere it more typically lives up to its name and is rather scarce. Surprisingly little detailed information is available on its habits and particularly its breeding site and nest type. It has been seen in association with rocky cliffs in mountains (a favourite feeding site of many species of swifts) and waterfalls. This has led to many statements that it also nests in these places although no nest has ever been found! To add to the list of possible nest sites, there have been reports of Scarce Swifts being seen entering and leaving the Elephant caves in Mt. Elgon National Park. Nests in caves are known for a number of species of swifts in other parts of the world. Some are located in the twilight zone near the cave mouth and others are located in areas of perpetual darkness and the swifts use echolocation to reach them.

It would be of particular value to our understanding of the Scarce Swift and its position in relation to other swifts if the nest was located and described. I would be most interested to receive information about the seasonal (?) occurrence of the Scarce Swifts on Mt Elgon, or elsewhere, and in particular any observations of its nest. This information would be included in a forthcoming review of the swifts of the world and all sources gratefully acknowledged. Please forward information to me at the address below.

Charles T. Collins, Department of Biology, California State University, Long Beach, CA 90840, U.S.A.

RECRUIT A NEW MEMBER

The following excerpt from the report on the Society for 1910 appeared in the Jo*urnal of the East Africa and Uganda Natural History Society* Vol.2 1911.

If each member would secure one new member during the current year and write himself, or induce a friend to send in an article or interesting 'note' for the Journal, the Society would be on a sound basis, and the present continual anxiety of the Editors as to where the necessary manuscript for the next Journal is coming from would be avoided.

John Sergeant,
Honorary Secretary.
Nairobi, March 1911.

History repeats itself - once again your Committee asks you to recruit a new member and either contribute, or encourage a friend to contribute, an article or interesting note either for the *Bulletin* or the *Journal.*

Costs are rising continuously so - the more Members - the more revenue available for the production of our publications and other projects of the Society.

Also, the Editor of the *Bulletin* in particular would be spared the "continual anxiety" as to where the necessary manuscript for the next issue is to come.

It worked in 1911, let us hope that it will work in 1991.

Daphne Backhurst,
Editor.

SOCIETY NOTICE

Help in the society office is another "continual anxieety" suffered by our hard pressed and hard working secretary. Should any member be able and willing to devote even an hour or two occasionaly please ring the office and arrange a mutually convenient time to come.

Tel: 742131 or 742161.

Editor

MEMBERSHIP:
This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the Joint Society-National Museum Library (postal borrowing is possible); a copy of the EANHS BULLETIN every four months and a copy of each Journal published during your period of membership. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

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The Society publishes the Journal of the East Africa Natural History Society and National Museum. Each issue consists of one paper; sometimes two or more short papers may be combined to form one number. Several may be published during one year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

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This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS BULLETIN), P.O. Box 24734, Nairobi, or P.O. Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs can be published.

SCOPUS:
The Ornithological Sub-Committee publishes this bird journal five times a year, cost Kshs. 100 per annum. All correspondence to D.A. Turner, P.O. Box 48019, Nairobi, Kenya.

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FIRST RECORD OF *AEONIUM* IN SOUTHERN KENYA

The genus *Aeonium* (Crassulaceae) has received much attention in recent years. A monograph was published a couple of years ago, resulting from a doctoral project (Liu, 1989), and another study is currently under way by a postgraduate student in Hamburg. An account of the genus in parts of north-east Africa also appeared in two recent floras (Gilbert, 1989; Wickens, 1987).

Estimates of the number of *Aeonium* species range from 31 (Liu, 1989) to about 39 (Gilbert, 1989). Most are native to the Canary Islands, with some occurring also in the Madeira archipelago and southern Morocco. An interesting exception is *Aeonium leucoblepharum* A. Rich., which is found in north-east Africa and south-west Arabia. I have seen this species myself in Kenya, Djibouti and Yemen, and it is also reported from Ethiopia, Somalia, Tanzania and Uganda. All these populations are usually treated as a single variable species (Gilbert, 1989; Wickens, 1987), but Liu (1989) has described a second species, *A. stuesseyi*, based on some material from Ethiopia, Kenya and Tanzania. *Aeonium stuesseyi* differs from *A. leucoblepharum* mainly in the fine detail of leaf ornamentation. This character is very variable and it remains to be seen whether the new species will be upheld after the work now being carried out in Hamburg. It has also been suggested that the Arabian material might represent a distinct species (Gilbert,1989).

In Kenya, *Aeonium* has been reported only from high altitudes (1800-2800 m) in the north, in the flora regions K1 and K3 (Liu 1989; Wickens, 1987). The best known population, judging from the number of specimens in the East African Herbarium, is near the southern summit of Mt. Kulal. There, the plants can be seen on rocks, and growing as epiphytes in the forest. A population in the Mathews Range is referred to *A. stuesseyi* by Liu (1989).

On a visit to the eastern end of the Loita Hills in August 1991 I came across a flourishing population of *Aeonium* on a large rock crag (Newton 3865 EA, K). This is the first record for the genus in southern Kenya, in the flora region K6. The locality is at an altitude of 2300 m, well within the altitudinal range for these plants in northern Kenya. Under a low power microscope the leaf surface was found to be densely covered with minute hairs, less than 1 mm in length. On this character the plant matches Liu's description of *A. stuesseyi,* in contrast to the glabrate leaves of *A. leucoblepharum*. Liu also states that *A. stuesseyi* has a more southerly distribution, and this find fits into the gap between the Mathews Range and the localities in northern Tanzania.

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Leonard E. Newton, Department of Botany, Kenyatta University, Box 43844, Nairobi, Kenya

REPORT ON A VISIT TO JOZANI FOREST, ZANZIBAR

From 25 to 29 January 1991, four days were spent in Jozani Forest and surrounding areas observing, netting and ringing birds and collecting butterflies. The group consisted of S.C. Collins, M.G. Prettejohn, I. Bampton, Sulaiman Mohamed, Alawi H. Hija and A. Archer. The three former mentioned concentrated on butterflies while the remaining members of the group were mainly concerned with recording birds. Due to time restrictions, most effort was given to the swamp forest in the south and to the dense evergreen thicket and bush to the east and north-east covering coral rag areas. Four of the party camped in the forest while Sulaiman and Alawi were accommodated at the forest post. The availability of transport allowed easy access to the coral rag habitat. On one day A.A. was able to visit on foot the very interesting mixture of habitats to the north north-east. These consist of dense high thickets, open grassland studded with *Annona senegalensis* and an estimated 100 h plain, covered in a salt-tolerant grass which lies to the south of the mangroves on the south-west tip of Chwaka Bay. On this expedition I was guided by Nd. Shabani Imani, who has worked in the forestry department at Jozani for over twenty years, and who greatly impressed me, not only with his excellent knowledge of the area but also as a very good all round naturalist. Observations of any mammals encountered or signs of them were also noted. The hot weather was interspersed by several showers, mainly during the day and with two heavy morning storms.

ORNITHOLOGICAL OBSERVATIONS

Netting was confined to varying localities within the swamp forest. Time did not permit their use further afield. A total of 11 X 10 m nets were used at five different sites, each selected in an attempt to cover as much of the different vegetation types as possible. The nets were initially erected as 4 in a row, 3 in a row and 4 as two pairs. Later, the two pairs were moved to a new locality as 4 in a row. A total of some 390 net hours or an average of 35.5 hours per net daylight catching hours were recorded. In all, 128 birds of 9 species were netted, of these 45 were ringed and together with the remaining 83 birds were released. Detailed results are shown below.

Species	Number Ringed	Number Released	Total
Little Greenbul, *Andropadus virens*	20	69	89
Red-capped Robin Chat, *Cossypha natalensis*	10	3	13
Olive Sunbird, *Nectarinia olivacea*	6	10	16
Grey-backed Camaroptera, *Camaroptera brachyura*	3	1	4
Crested Flycatcher, *Trochocercus cyanomelas*	2	0	2
Tropical Boubou, *Laniarius ferrugineus*	1	0	1
Nicator, *Nicator chloris*	1	0	1
Green-backed Twinspot, *Mandingoa nitidula*	1	0	1
East Coast Akalat, *Sheppardia gunningi*	1	0	1

It is of interest that not a single immature bird was netted or observed during the four days.

The above results show the very high density of Little Greenbuls which occur not only in undergrowth but also in the mid-storey forest. The most interesting record is that of the East Coast Akalat which was previously known only from a sight record by H.J. Beentje in December 1989 (Beentje 1989) at N.W. Jozani. Photographs of the captive bird when compared with specimens at the National Museum, Nairobi, show a similarity with the race *sokokensis*. The Green-backed Twinspot was previously recorded in Zanzibar on only three occasions in the 1930's. In addition to the one caught, another pair were observed.

R.W.H. Pakenham records 36 species as occurring in Jozani Forest (Pakenham 1979); of these, 26 species were observed during our visit and two, the African Wood Owl *Ciccaba woodfordii* and the Yellow-rumped Tinkerbird *Pogoniulus bilineatus* were heard.

Shortness of time allowed only a cursory look at the dense thicket area to the east and north-east of the swamp forest. The most interesting bird observed there was Fischer's Turaco *Tauraco fischeri*. A single bird of this species flew across the track to Charawe, 10 km north of the main Paje road, some 50-60 m in front of the vehicle in which we were travelling. It was clearly seen by S.C. Collins, R. Bensted-Smith, a passenger in the vehicle, and A. A. The race *zanzibaricus* is endemic to the island and restricted to the Jozani area. Since it has not been recorded since 1937, it was thought possibly to be extinct (Britton 1980). However, further investigation indicated that this Turaco is well known to the local people and is called *Jogoo Mwitu* - Cockerel of the Forest. I.Bampton heard a Turaco calling the following day in the same area and a pair were seen on 30 January 1991 in the forest north west of Jozani (C.K. Ruffo pers. comm.).

ENTOMOLOGICAL RESULTS

Nearly 100 species of butterflies were collected; among these, preliminary identifications indicate that three species are new to science while three

others warrant description as distinct sub-species. These remarkable results not only indicate the lack of previous entomological knowledge of the area but also emphasises the importance of Jozani ecologically.

Following is a list of the butterflies recorded and their associated food plants, where known.

PAPILIONIDAE	**HOST PLANT IN JOZANI**
Papilio demodocus	*Citrus medica*
P.nireus lyaeus	*Toddlia asiatica*
P. dardanus tibullus	*Citrus medica/Teclea trichocarpa*
Graphium pylades angolanus	*Anona senegalensis*
G. pelopidas [1]	Apocynacae
G. colonna [2]	
G. policenes or antheus	Probably *Uvaria lucida* and *Monanthotaxis fornicata*
G philonoe [6]	
G. porthaon [6]	
PIERIDAE	
Belenois thysa	*Capparis* sp.
B. creona severina	*Capparis* sp.
Appias lasti	
Eronia cleodora dilatata	*C. erythocarpa*
Colotis eunoma flotowi [1]	*C. fascicularis*
C. euippe omphale	*Capparis* sp.
Mylothris chloris agathina	*Loranthus* sp.
Eurema brigitta brigitta	*Alizzia adianthifolia*
E. desjardinisi regularis	*Cassia* sp.
E. hecabe solifera	*Cassia* sp.
RIODONIDAE	
Abisara zanzibarica [1]	
NYMPHALIDAE	
Charaxes castor flavifasciatus	*Afzelia quanzensis*
C. brutus natalensis	*Trichelia emetica*
C. pollux piersoni [1]	*Bersama abyssinica*
C. cithaeron kennethi	*Afzelia quanzensis*
C. violetta melloni	*Paulina linnata, Deinbollia, Blighia unijugata*
C. varanes vologeses	*Borbonica, Allophyllus pervillei*
C. candiope	*Croton pseudopulchellus*
C. jahlusa kenyensis	*Haplocoelum foliolosum*

NYMPHALIDAE (continued)	HOST PLANT IN JOZANI
C. ethalion	*Tamarindus indica, Albizzia adianthifolia, Dichrostachys cinerea*
C. macclouni [4]	Cultivated bamboo, *Oxytenanthera*
Euxanthe wakefieldi	*Deinbollia/Bligha unijugata*
Hypolimnas dubius wahlbergi	*Borbonica*, Urticaceae
H. deceptor [4]	*Borbonica*, Urticaceae
H. misippus	*Portulaca* sp.
Pseudacrea lucretia expansa	*Manilkara sulcata*
Junonia oenone oenone	*Asystasia* sp. *Justicia* sp.
J. terea elgiva	*Asyatasia* sp.
J. natalica	*Asystasia* sp.
Precis actia	
Byblia ilithya	*Tragia*
Euretela dryope angulata	*Ricinus communis*
Neptidopsis fulgurata platyptera	*Tragia*
Neptis penningtoni	
N. saclava marpessa	
Phalanta phalanta aethiopica	*Flacourtia indica*
Euphedra neophron littoralis	*Blighia unijugata, Deinbollia borbonica*
Eurephene cocalia orientis	*Palmacae, Rhaphia* sp.
ACRAEDIAE	
Acraea zonata [3]	
A. aubyni [4]	
A. insignis balbina [4]	
A. egina pembanus	*Adenia* sp.
A. zetes acara	*Adenia* sp.
A. natalica	*Adenia* sp.
A.esebria	Urticaceae
A. eponina	Tiliaceae
A. acrita	
DANAIDAE	
Danaus chrysippus aegyptius	Asclepiadaceae
Amaurus niavus dominicanus	Asclepiadaceae
A. ochlea ochlea	Asclepiadaceae
SATYRIDAE	
Melanitis leda helena	*Panicum* sp.
Henotesia perspicua	Graminae
Bicyclus safitza	Graminae
B. campina ocelligera	Graminae
Ypthima granulosa	Graminae

HESPERIDAE	
Gomelia elma	Malvaceae
Tagiades flesus	Discoreaceae
Fresna sp.	
Acleros mackenii	
Andronymus caesar philandero	*Blighia unijugata*
Borbo barbonicca	Graminae
Gegnes pumilo	Graminae
Spialia spio	Malvaceae
LYCAENIDAE	
Delaneura sp. nov. [1]	
Pentila trocialis mombasae	Algae
Teriomina subpunctata	Tree algae
Spalgis lemolea	Coccids (wooly aphids) carnivorous
Virachola antalus	Pods of leguminous plants
V. dariaves	*Deinbollia* (fruit)
Anthene amarah	*Cichrostachys linerea*
A. kersteni	
A. rubimaculata ssp. nov. [1]	
Lipaphnaeus aderna spindasoides	
Axiocerses punicea	Olacaceae (on mainland)
Spindasis apelles [1, 2]	
Euchrysops osiris	Herbaceous plants
Cupidopsis cissus	Herbaceous plants
Leptotes pirathous	Herbaceous plants
Zizeeria kysna	*Oxalis* sp.
Lachnocnema bibulus	Homoptera, Carnivorous
L. durbani	Homoptera, Carnivorous
Agriolaus lalos [5]	*Loranthus nr. Ulugurense*
Epamera silanus ssp. nov. [1]	*Loranthus nr. fischeri*
E. sidus	*Loranthus nr. fischeri*
E. diametrea ssp. nov. [1]	*Loranthus nr fischeri*
E. mermis	*Loranthus nr. fischeri*
Myrina silenus fidecula	*Ficus sur*
Hypolycaena phillippus	

Total 95

Notes :

1 Endemic sub-species
2 Type locality Zanzibar
3 Recorded May 1988
4 Recorded September 1990
5 Needs revision
6 Recorded April 1991

DISCUSSION

Kielland (1990) in his introduction to the book on the butterflies of Tanzania, when talking of Pemba Island, says: "It is a very interesting island and contains a number of endemic taxa, in contrast to Zanzibar. This is because Pemba has been isolated from the East African mainland for a long period while Zanzibar's isolation is more recent."

The present study will refute part of this statement in that Zanzibar also has a good number of endemic taxa, and has previously been less thoroughly studied from a Rhopaloceral (butterfly) viewpoint. Pemba has ten endemic species to Zanzibar's nine.

We made two trips to Jozani Forest in September 1990 when 51 species were recorded in two days. Here studies were more confined to the primary forest and plantations while the one reported here in January 1991 was for four days when the adjacent coral rag was also studied and 95 species were recorded.

On another visit to Ngezi Forest on Pemba Island in December 1990 we recorded 56 species over five days. Studies of Ngezi Forest have been previously reported by Kielland (1985) when 89 butterfly species were recorded.

During the last century Zanzibar was the chief trading port of the East African Coast, and many of the species which were collected along the coast were sent to the wealthy entomologists in Europe at that time (people such as Charles Oberthur and Lord Rothschild). They in turn described material as coming from Zanzibar when actually they could not have occurred there (lack of food plants) e.g.*Euptera kinugnana* : synonymous with *E.kinugnana* from the African mainland. This sort of error was not uncommon at the time due to the long duration of voyages and insufficient data labelling. There are several examples of South African specimens said to have been collected in the Gulf of Benin, West Africa.

There seems to have been a long gap in the butterfly study of Zanzibar. There is a prodigious amount of material in the British Museum (Natural History) London, collected by a man named Moreland around the turn of the century. He was active on both Pemba and Zanzibar.

If we examine the relationship between the Zanzibar population and that of the mainland, there are some strong affinities to the mainland populations from the Usambara Mountains, e.g. *Abisara zanzibarica, Anthere rubimaculata, Spamera silanus* ssp. Whilst there is already recognition of this in the Ngezi Forest, Pemba, the Zanzibar element remains undocumented to date for Jozani Forest.

If the Jozani Forest is to be further protected, both the primary forest with the *Callophyllum/Cassurina* planted area should be preserved as well as a substantial area of the adjacent coral rag bush along the road to Charawe village. When further sampling is done Zanzibar will produce at least 100 species (two species subsequently added by A. Archer in April 1991). This is around 1/10 of the total Tanzania butterfly species which is not insignificant considering the level of cultivation on the island.

Jozani and its surroundings must be considered an important biotype and the last of its kind.

In addition to the butterfly records, three species of cetonid beetles were attracted to *Charaxes* traps, one of which is a new race endemic to Zanzibar. This is called *Amauroides passerini* ssp. nov. having been described by Dr. V. Allard in 1991 in *Sciences Nat.* Paris.

MAMMAL OBSERVATIONS

The most important mammal in Jozani is the Zanzibar Red Colobus*Colobus badius kirkii*. These fortunately occur in significant numbers and at least one troop of 25 - 30, which live in the vicinity of the forest post, are becoming increasingly habituated. Blue Monkeys *Cercopithecus mitis* occur in seemingly similar numbers. Two Red-bellied Coast Squirrels *Funisciurus palliatus* were seen on the edge of the swamp forest, while S.C. Collins saw a Giant Elephant Shrew *Rhynchocyon cirnei* in the coral rag thicket. Six fruit bats of the genus *Epomophorus* were caught in the mist nets. Tracks and a skull of Bush Pig *Pocomochoerus porcus* were found in the swamp forest together with tracks of a small duiker or suni. At least one species of Bushbaby was heard calling at night.

The dense thicket areas (according to an informant, Shabani Imani) are the home of three small antelopes namely, Ader's or Dwarf red Duiker *Cephalophus adersi* (Swahili: *Nunga*), Blue Duiker *C. monticola* (Swahili: *Chongome* or *Pakazi*) and Suni *Neotragus moschatus* (Swahili: *Chezi*). All three are extensively hunted either by being driven into nets by dogs - I personally met a hunting party near Paje which had just killed a Suni by this method - or at night using dazzling lights. Another method is for 15 - 20 beaters to drive an area of thicket chasing the game on to six or more concealed hunters armed with shot guns. During the course of the morning visit to the area, A.A. picked up two spent 12 bore cartridges. Shabani claimed that 12 - 15 animals would be killed on each of these hunts which would consist of several drives. The hunts take place about once every two months which would indicate a take off of approximately 70 - 80 antelope per year. Ader's Duiker, which are diurnal in habit, are apparently very seldom shot at night. (Kingdon, 1982).

At one time leopard occurred in both Jozani Forest and the coral rag thickets. However, nobody A.A. spoke to could reliably report on having seen one during the past two years.

CONCLUSION

A far greater detailed knowledge of the biology of Jozani Forest and the surrounding area is clearly required. However, this preliminary survey, which only covered a limited part of the area, indicates that there is no where else on Zanzibar that has the same potential for the creation of a Nature Reserve or National Park. Such a park, if designated, should include the whole of Jozani Forest and the adjacent areas of thicket, high thicket, high forest and open grassland to the north. Clear boundaries

demarcating the area should be established. R. Bensted-Smith has already made suggestions for the formation of such a protected area. This would go in conjunction with tourist promotion, which in turn would benefit the local people, particularly from Charawe, who at the moment derive some income from pole cutting in the coral rag thickets.

ACKNOWLEDGEMENTS

Permission to visit Jozani Forest was kindly given by Nd. Mwajuma H. Ussi, Director of Forestry. The Director of Environment, Nd. Abdulrahman S. Issa arranged transport and authorised two of his staff, Nd. Sulaiman Mohamed and Nd. Alawi H. Hija to join the party. We are also most grateful to Timo Laisi, Project Manager, FINNIDA, for his support and that of R. Bensted-Smith at all times.

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PSEUDOSTIXIS BASIGRANOSA BREUN(PHRISSOMINI, LAMIINAE,COLEOPTERA) BREEDING IN OIL GERANIUM IN KENYA

INTRODUCTION

The late Mr R. Mennel of Kirongo Farm, Naivasha showed the writer some samples of oil geranium plants invaded by white coleopterous larvae. A visit was made to the farm on 7 July 1972, where a two hectare section of the crop was inspected and many damaged plants were found and removed for detailed examination in the laboratory.

The infested geraniums were about six years old and the crop had provided some 556 kg of oil over a period of nine cuts. The plants were

about 60 cm high and in diameter of the canopy. Stems at ground level varied from 4 cm to 7 cm in diameter and were strongly lignified.

Weeding was generally undertaken with a hoe (Jembe) between and under plants, while cropping is by grasping a handful of green terminal shoots and cutting downwards with a heavy knife (Panga).

A rough estimate of damaged plants indicated 10 - 15% to be infested by the larvae. Invaded plants were obvious, with dead sections of growth and/or die-back of a lateral branch due to implement damage.

The method of primary invasion could not be seen in the field and there was no evidence of early terminal die-back or limp, wilting shoots. In the laboratory plants were carefully dissected, commencing from the growing point and working down soft green tissue to the hard corky wood of the main branch or stem. No evidence was found of invasion of living tissue or of larvae subsequently working down the stem, as is the case with many species of Lamiinae.

On the contrary, the smallest workings 1.0 to 3.0 mm in diameter were found to commence near an old wound or scar in dead wood. Examination of the workings showed that larvae tunnelled downward, always in dead wood or nearly dry wood but never in sappy or fungus infected wood. No working went deeper than the collar section of the main stem at ground level and more often pupal and exit holes were found later higher up in the main stem or the base of a larger lateral branch.

Tunnelling was often first downwards to a certain level and then ascending again parallel with the primary working, often with a third descending tunnel to the pupation cell. The pupation cell was excavated near the cortex but left the bark undamaged. The imago exit hole was circular, 0.5 cm in diameter. Frass was very fine but shavings were to be found plugging any section that neared a point of damage such as a split and also at the top of the pupal cell.

Large larvae found in the wood were left *in situ* and the piece of wood bound with sellotape and deposited in a cage. Some beetles emerged during November in the laboratory, which suggests a pupal period of about three months. Beetles from smaller larvae did not emerge until June 1973.

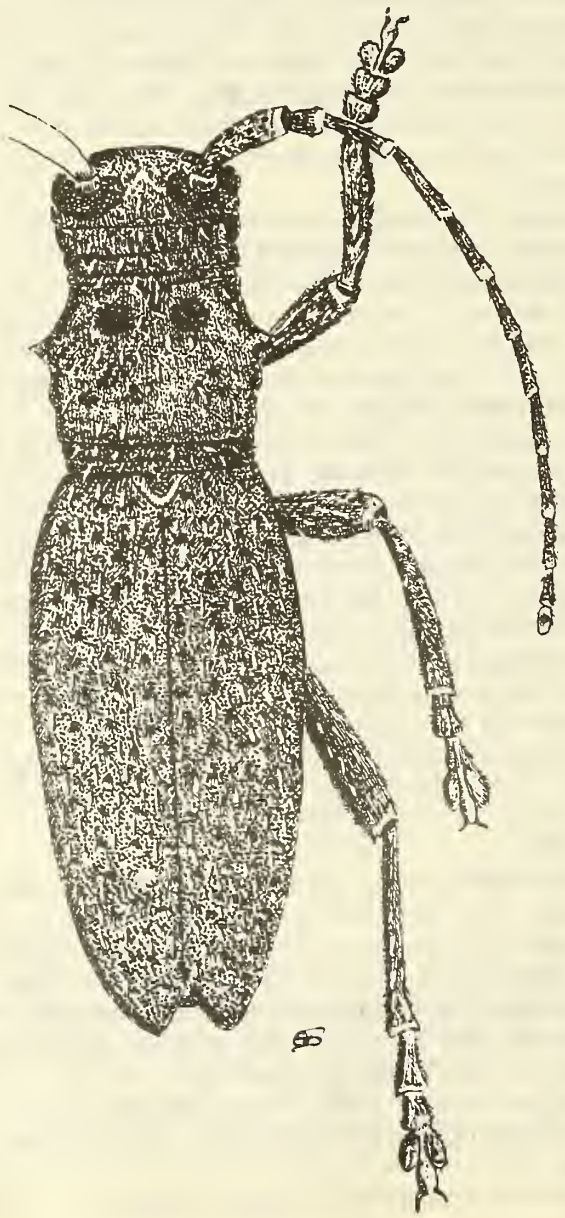
DESCRIPTION

The original description by E. de Breuning (1945) reads — " Near to *flavifrons* Auriv., but with the front lobes of the eyes as long as the cheeks; the pronotum not dotted, except for some small round obtuse protuberances; the lateral spine a little longer; the elytrae very finely granulated at the base; the basical parts and the apical parts of the antennal segments, from the fifth on, are ringed with yellow. Wings completely reduced. Length: 11 mm. Width: 4 mm. (Fig.)
Type from Belgian Congo: N.E. Gando, 2400 m (a.s.l.) [Kihorwe to Iloga], in the collection of the National Parks of the Belgian Congo."

Egg. Not seen.

Larvae. Creamy white, maximum length at pupation *c.* 23.0 mm.

Body. Cylindrical, sparsely provided with fine hairs. Pronotum width 3.5 mm almost square, just broader than long, corners rounded, light brown. Mandibles well chitinised, strong. Legless, dorsal pseudopods well developed, particularly the thoracic, forming three ridges across the dorsum. Thoracic segment half as deep as abdominal, anteriorly, posteriorily compressed. Ventral pseudopods conspicuous, well developed. Spiracles inconspicuous except on thoracic segment 2. Terminal segment reduced, less than all other abdominal segments.



Pupa. Not seen. No pupal exuviae were found in the pupation cells at the end of the tunnel. These are probably destroyed as the imago works to effect an exit.

Imago. Male smaller from 10.50 mm; female larger to 12.0 mm in length. Greatest breadth across head by eyes, male 2.25 mm; female 2.50 mm. Thorax, anteriorly to spines, male 2.50 mm; female 3.25 mm. Elytra, male 3.50 mm; female 4.50 mm. General appearance black with some lighter speckling on elytra and thorax. Head dark brown-black, tormentose. Eyes jet black, extending posteriorily around base of antennae. Posterior portion, dorsally black, pubescent with a few white flat scales. Antenna 13, jointed: basal 1 very small. 2 long and broad, broadest of all; 3 very small; 4 the longest at 3.3 mm; 5 - 13 each gradually decreasing in length. Each all black, with a pale base but apex with a fine fringe of white hairs. Thorax rounded with a single lateral thorn-like spine. Dorsally with slight raised protuberence, thus forming two black pubescent spots, one on each side of the median line. Posteriorly the median line ends in a narrow bunch of ochreous pubescence. The whole thorax otherwise punctated, almost black pubescent with a few scattered white scales. Scutellum ochreous pubescent. Elytra, long terminating in blunt points, deeply and regularly punctated overall, these showing as shiny black spots; pubescent, dark grey with sparse white scales in a regular pattern. Legs black, densely pubescent grey with sparse white scales. Base of tibia fringed with golden hairs. Tarsi, three, jointed. Claws long, strongly curved. Males less densely pubescent generally, with a slightly more shiny overall appearance. Fewer white scales intermingled on the elytra. These white scales distinctly longer and broader than those forming the general pubescence. Wings atrophied.

DISCUSSION

From laboratory and field evidence *P. basigranosai* is not a primary pest of oil geranium, for the larvae only work in those portions of the plant which had been damaged previously during weeding operations and which had subsequently died and dried out. It was clear that in order to avoid infestation even of this dead tissue, greater care by the weeding gangs and cutters is essential. The plant is readily damaged as the branches are very brittle, particularly where lignification commences. As the beetle is only a secondary invader, no control measures are necessary.

No alternate host species is known and the only members of the Geraniaceae in the area are *Pelargonium whytei* Bak and *P. alchelilloides* (L) Ait. and *P. quinquilobatum* A. Rich., with *Geranium ocellatum* Cambess, none of which appears to have sufficient woody stem to accommodate the larvae. *Hibiscus* spp. might be a possible alternative host.

There is no mention of this beetle in Le Pelley (1959).

SUMMARY

Some coleopterous larvae were found living in dry lignified tissue of the oil geranium *Pelargonium odoratissimum* at Lake Naivasha, Kenya. Beetles later emerged from samples of the plants and were determined as *Pseudostixis basigranosa* Breun. The larvae only worked in dead dry tissue following damage to the plant by weeding implements. A description of the late instar larva and the imago is given. No control measures are considered necessary. No natural alternative host plant is known. This is probably the first record of this species for Kenya and the first larval host record.

ACKNOWLEDGEMENTS

My thanks are due to the late Mr R. Mennel for drawing my attention to this beetle. My thanks are also tendered to the Director, East African Agricultural and Forestry Research Organisation, Muguga, Kenya and to the Commonwealth Institute of Entomology, to whom specimens were sent for determination. Special thanks are made to the Librarian, Royal Entomological Society of London for checking references.

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HUGE (LYAENID) BLUE BUTTERFLY EMERGENCE

DOWN THE MAGADI ROAD

On 12 October 1991, a vast emergence of *Azanus ubaldus* (Lycaendiae) was observed down the Magadi road 35 km from the Langata Road turn-off. The *Acacia* were just into bud burst and there was a proliferation of *Acacia mellifera* (one of the "wait a bit" thorns) blossom. The *Azanus* blues were swarming around the trees and, on shaking one, a huge swarm (like bees) would fly around before resettling. *Azanus* breeds on *Acacia* bush in dry country, but I have never seen such swarms of butterflies that were not migrating.

I sampled over 1200 individuals with net sweeps, and counted about 2% *Leptotes pirithous* , another little lycaenid, in the population. However, the sample of individuals only yielded three females of *Azanus* which is an extraordinary ratio. The swarms were so intense it was quite impossible to examine other species of lycaenid.

I wonder if anybody else has observed such a population explosion. There were literally millions.

Bird activity did not appear significantly increased, (observations were made between 09.00 h and 12 noon). Once we moved away from the belt of flowering *Acacia* , butterfly numbers dropped off, but there was still significant evidence of activity of *Azanus ubaldus*.

Steve Collins, Box 14308, Nairobi.

BONES FROM DONGODIEN SITE, EAST TURKANA

During the months of July and August 1991, excavations were carried out at Dongodien in Northern Kenya. The site was first excavated some fifteen years ago by Barthelme (1985) and is the earliest well dated site in Eastern Africa with evidence of pastoralism.

The aim of further research was to shed light into the economic and cultural patterns of the earliest pastoralists in the Lake Turkana basin. This will form part of the writer's M.A. Thesis to be submitted to the Department of History, University of Nairobi.

Besides cattle and goat/sheep remains, fish bones were also recovered. The presence of fish bones at the Dongodien site suggest that fish were part of the pastoralists diet (Marshal *et al.* 1985). However, some of the fish bones might be the result of natural death at the lake, since Dungodien was once flooded following a rise in the lake (Owen *et al.* 1982).

Preliminary field observations indicate the presence of Nile Perch, Tiger Fish, Turtle, Hippopotamus and Catfish in Lake Turkana some 4000 years ago. Further investigation will throw light on to the natural life along the former shorelines of the lake. This might include birds which lived on the shores.

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N.F.D. SAFARI

I did a Northern Kenya safari during August with six Italian visitors. We drove through Bogoria, Maralal, Loyengelani, Allia Bay (Sibiloi National Park), North Horr, Marsabit, Samburu and back to Nairobi.

Sibiloi National Park was interesting, as usual, the Somali Ostrich were in breeding plumage and were to be seen all over the park. Lion were heard at night at the Rocodoni Camp site at Allia Bay. Grants gazelle and Grevys Zebra were also seen in fair numbers. The park rangers at Sibiloi are doing a commendable job in controlling (by confiscation) Gabra livestock that wander into the park searching for grazing. There is a vast difference between the vegetation inside and outside the park boundaries. Goats are visible on bare lava fields finishing off the vegetation and contributing to the Sahara's march southwards.

A few Ostrich and Kori Bustard were seen in the Chalbi Desert area though Marsabit National Park was more rewarding. Two nights were spent at Marsabit Lodge and there were good sightings of Greater Kudu, a lot of Bushbuck, Buffaloe and Elephant including juvenile elephants.

I was surprised to find *Salvinia molesta* growing on Lake Paradise, it being such an isolated body of water and at a higher altitude than the surrounding plains. One wonders how it spread there. There could be two possibilities: migratory birds which stop over at the lake or, less likely, wind borne.

A lone Grevys Zebra was seen drinking at Lake Paradise, this seemed unusual since they are dry country animals. This individual was in an area of dense forest next to the lake, completely out of its natural habitat, and it must have strayed in from the plains.

The N.F.D. is an interesting area and you are guarantied not to see any minibuses !

Pritpal Singh Soorae, Box 44919, Nairobi.

A VISIT TO MAURITIUS

In June 1991 my husband attended a Rotary Club conference on the lovely island of Mauritius and with the few days to spare afterwards, I was fortunate in having an introduction to Mr Ehsan Dulloo, the Assistant Conservator of Forests, who took us by Landrover from his Curepipe office to the Maccabee forest area for a few hours. It was very cool and wet but proved to be a most interesting introduction to the conservation problems of the island and quite different to any similar area in East Africa.

First visited by the Portuguese, the island was colonised by the Dutch from 1598, then from 1735 to 1810 it came under French rule as the Isle

de France and after that, until the island became an independent state in 1968, was administered by Britain. A statue of Queen Victoria in Port Louis still remains, the official language is English and Queen Elizabeth is Head of State.

The floral history of the island has also been marked by invasion and occupation by aliens, many of which have become serious weeds so that today only 8% of all plants are indigenous. Crop plants and ornamentals were deliberately introduced, but many others came uninvited carried by the ocean,winds, birds and man. Although conservation laws date from as early as 1777, economics dictated the complete exploitation in the dense forests of the desirable ebony wood *Diospyros tessellaria* which used to cover much of the higher ground. From 1639 began the great planting of sugar cane in the lowlands. Today, sugar covers much of the island and provides the mainstay of the economy. Sugar cane thrives in the hot moist climate, requiring no shade from trees. The cane grows right to the edges of the roads and only islands of large rocks emerge from the sea of willowy grasses bending in the wind. Sugar cane is, incidentally, cyclone-proof; no plant can last long if it breaks in the hurricane force winds which arrive every year. One notices cyclone shelters, which are marked, while travelling through the villages.

A detailed study by Vaughan and Wiehe made in 1937 described the history and the state of the vegetation of the island. The Museum in Port Louis displays a map showing the shrinking size of the forest cover from 1773 to 1937. In the Forestry office is a map of the island covering one whole wall showing the small patches of remaining forest and land use all over the island.

Ehsan took us to one of the seven "reserve plots" in the Macabee forest near the Black River Gorge and Petrin. The plot had walls and fences to exclude all animals except, unfortunately, monkeys.

A species of deer *Cervus timorensis* were introduced from Java in 1639; today herds provide a high quality desirable meat in a land with few cattle and we visited a deer farm promoted by one of the sugar estates. Exotic pigs, rats, mongoose and shrews have all taken their toll on young tree saplings and native birds, mainly ground dwellers. There are three species of indigenous bats but even the monkeys, now wild, were introduced.

Mention must be made of the famous Dodo *Raphus cucullatus*, a large pigeon. In the 1660s "when the Dodo breathed its last, we had the dawning of conservation consciousness". So reads an Air Mauritius brochure promoting the sale of five jewelled broaches depicting the Dodo and four other endangered bird species of Mauritius. These are: the Mauritius Kestrel *Falco punctatus*, the Mauritius Fody *Foudia rubra*, the Red-tailed Tropic Bird *Phaeton rubricauda* and the Pink Pigeon *Nasuenas mayeri*. The money collected from the sale of these broaches, encouraged by the government of Mauritius and the Mauritius Wildlife Appeal, goes towards projects to prevent further losses of indigenous wildlife in the

island today. As we bumped along the forest track we passed a vehicle full of "birders" on their way to check sightings of the rare birds of the forest.

As always, there is a link between birds and their food plants. The Pink Pigeons feed mainly on flowers, fruit and leaves of indigenous plants and they do not like the introduced flora as substitutes. The bird prefers fruits of Le Fangame, *Stillingia lineata* (Euphorbiaceae). Because the latex of it's fruit tainted the birds' flesh, it was less attractive to hunters than other birds and so was saved from extinction. In recent years, as more land was cleared for crops such as tea, fewer endemic food plants remained until only one small breeding population remained in the forest. In 1990, 21 Pink Pigeons were released back into protected forest areas after a 20 year captive breeding programme in Government Aviaries.

At the reserve plot we peered through the chain link fence at the indigenous plants within - for here, since 1979, all exotic plants have been weeded out by hand. For thirteen years this little enclave of forest had been encouraged to grow as it once did hundreds of years ago. We looked at two unremarkable spindly trunks of *Claoxylon linostachys* var. *linostachys* (Euphorbiaceae). These are the only two trees of their kind in existence! A ranger checks the plots regularly for weeds, for damage by monkeys and, most importantly, he records flowering and fruiting of plants and collects seeds. Seed is taken to a special tree nursery where some 20 species have been reared into saplings to be studied or replanted. In the dense tangle of weeds no indigenous tree seedling can be replanted and established without a lot of help from the staff of the Forestry Department.

The competition from exotics is fierce. Major weeds are the huge Travellers' Palm *Ravenala madagascariensis* , rampant throughout the wet forest for centuries. Also the Chinese Guava *Psidium cattleianum* originally brought to Mauritius for its delicious fruit. Birds eat the fruit which are full of seeds and Ehsan pointed out the masses of young seedlings all along the forest paths, for germination rates are very high. Other invasive fruits are *Syzygium jambos, Eugenia uniflora, Rubus alceifolius, R. roseifolius.* A privet *Ligustrum robusta* the Red Pepper *Schinus terebinthifolius* as well as the Mexican Hemp *Agave americana* are all troublesome.

Mr Dulloo is making a study of endemic coffees *Coffea* spp. and we saw *Coffea macrocarpa* growing. Any extra information on the genetic diversity of coffee is welcome. Timber is in short supply on the island despite reafforestation with Pines *Pinus elliottii* and some Eucalypts. Camphor wood *Cinnamomum camphora* has also been planted for timber and its fragrant soft wood is used to make elaborate scale models of old sailing ships, one of the products offered to tourists; tourism is now a major and growing industry.

Gardeners may like to know that there are four decorative indigenous *Hibiscus* and several beautiful wild orchids in Mauritius. In addition there are several *Trochetia* or Wild Camellias, a fragrant white *Ochna* and a pretty pink *Dombeya.* One must not forget the very special palms and *Pandanus* on Mauritius and on the adjacent small islands.

This is a very short introduction to the natural history of the island, which is well worth a visit. The World Wildlife Fund, among others, is actively supporting conservation and there is a Mauritius Wildlife Conservation Society and Wildlife Clubs.

Ann Birnie, Box 30158, Nairobi.

EANHS CHAIRMAN'S REPORT FOR 1991

PROF. STEVEN G. NJUGUNA

Ladies and Gentlemen

It is with great pleasure that I take this opportunity to welcome you all to the society's 81st Annual General Meeting (AGM) and also to report on the management of the Society's affairs throughout the year.

Over the past year, the Society has expanded its range of activities and increased its membership. The administration of the society's office continued to run smoothly. In this regard, I wish to express my most sincere gratitude to Ms. Lorna Depew, our honorary Secretary, for a remarkable job at the Society's office.

Several field excursions were undertaken during the period under review. These included, to name a few, a visit to Mrs Elisabeth Flower's tea estate at Limuru, a trip to lakes Baringo and Bogoria led by the Chairman, a botanical sub-group trip to Ololuo forest led by Mr Gatheru and Mr Mungai of the National Museums of Kenya, a week-end at lake Naivasha (Elsamere) organised by Dr. Clive and Pam Lovatt and led by Mr and Mrs Campbell and, finally, a trip to Kajiado led by Dr. Richard Bagine where the group studied the grasslands and witnessed the dissection of a termitarium.

A number of interesting lectures and films were also presented over the last year. A few of these lectures included : the WWF rhino survey by Mr. Ted Goss, the honey-guides by Prof. Lester Short, the orchids of the Ngong Hills by Mr. and Mrs. Campbell. The trips and the lectures presentation were offered despite the fact that the society had problems in having an honorary functions organiser. I wish to thank Mrs. Judith Rudnai and Ms. Lorna Depew for stepping in and ensuring that these important functions of the society succeeded.

The Bulletin under the editorship of Mrs Daphne Backhurst continued to appear regularly on a quarterly basis. It has been observed that there is a marked improvement in the latest issues since the change of the bulletin size during the 80th Anniversary year. The quality of the Bulletin is remarkable thanks to Mrs. Daphne Backhurst.

The Society's Wednesday bird-watching walks continued every Wednesday at 8.45 without fail. In this connection, I wish to thank Mrs. Fleur Ng'weno, Maryanne Kamau, Pat Wooton and Damaris Rotich.

I wish also to thank the Journal Editorial sub-committee under the chairmanship of Mr. Charles Dewhurst for the excellent performance during the past year. Journal Issues Vol 79 No. 194, Vol 80 No 195, and Vol 80 No. 196 were produced during this period. The quality of the journal issues has remained high. Financial support has been received from Barclays Bank (KShs 7500) and Eden Wildlife Trust (KShs 10000). To these two organisations I wish to extend our grateful thanks.

In September 1990, the Hon. Treasurer Dr. Clive Lovatt left the country after performing an excellent task in streamlining the Society Accounts. Before he left, he identified and persuaded an able accountant Ms. Maired O'Flynn to assist the society in keeping accounts. Ms. O'Flynn has not only done a commendable job with the accounts but has also come up with timely recommendations which she plans to present to this AGM. I wish to thank Dr. Clive Lovatt and Ms. Mairead O'Flynn in this respect.

The joint library Sub-committee under the chairmanship of Ms. Rosalie Osborn, our Hon. Librarian attended to library matters promptly. Towards the end of last year, the Sub-committee prepared library rules and guarantee guidelines which are now in operation. I wish to thank Ms. Osborn and the members of the joint Library Sub-committee.

During 1990, the society participated in two very important functions. On a voluntary basis, members of the Society took part in the game census in Nairobi National Park in January, March, May, August and October 1990 in support of the Kenya Wildlife Service. The Society also sponsored the 1990 IWBR training programme at Lake Naivasha on the identification of waterfowl. Several Society members participated in the training exercise.

Our relationship with the National Museums of Kenya remained on an even keel and on behalf of the Society, I wish to thank the Museum's Director/Chief Executive, Dr. Mohamed Isahakia for the assistance he has given in allowing us the use of the museum's facilities.

Ladies and gentlemen, may I conclude my remarks by thanking the following members who have assisted me in running the Society's affairs throughout 1990 :

Mrs. Fleur Ng'weno, the out-going Vice-Chairman, who steered the Executive Committee in my absence. Dr. Clive Lovatt and Ms. Mairead O'Flynn, Mrs. Peris Njuguna, Mrs. Daphne Backhurst, Mrs. Judith Rudnai, Mrs. Inga Ayres, Mrs. Pam Lovatt, Mrs. Marjorie Watts, Ms. Maryanne Kamau, Ms. Lucy Gathara, Mr. Onesmus Kahindi and last but not least Ms. Lorna Depew.

I wish also to thank our auditors, Muchekehu & Co. for auditing our accounts in time and the co-opted members of the executive committee for their willing and ready help. Finally, I wish to thank all the members of the Society for the support you have given me during the two years I have served as Chairman.

To the incoming Chairman, and the new executive committee, I wish you success as you steer the Society to even greater heights in fulfilment of its objectives.

Thank you

Prof. Steven Njuguna, outgoing chairman EANHS

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PARK ENTRY FEES FOR NAIROBI NATIONAL PARK
EFFECTIVE 15TH DECEMBER, 1991

Many people are confused about national park fees. We would like to advise our readers about the new fees and encourage them to use our parks, especially Nairobi Park. We feel that the support of our residents is a most important safeguard against the park being turned into a housing estate. Given below is a short extract of the most relevant information. More details are available from Park Headquarter offices at the Nairobi Park.

Special car passes are available to enter three National Parks, specified on the pass, for KShs 3000. The pass is valid for twelve months for a particular vehicle and carrying two adults (including the driver) and two children under sixteen years of age all of whom are Kenyan residents. Photographs of adults must accompany application for the pass.

VEHICLES	PER ENTRY
Motor vehicle with seating accommodation for not more than 5 passengers (cars)	55/=
Motor vehicle with seating accommodation for more than 5 passengers but less than 13 (Minibuses)	85/=
Motor vehicle with seating accommodation for more than 13 passengers (buses)	220/=

VISITORS DAILY FEES	RESIDENTS	NON-RESIDENT
Age 12 years and over per person	55/=	450/=
Child aged between 3 and 12 years	20/=	50/=
Organised groups		
Students of educational institutions (per student)	5/=	50/=
Non-students over 12 years (per person)	20/=	90/=
Student aged between 12 and 23 years with a valid student pass or student ID card	25/=	220/=

CAMPING AND SELF-HELP BANDAS	(RESIDENTS)
Camping	
Age 12 years and over per person	30/=
Child aged between 3 and 12 years	5/=
Self-help bandas	
Age 12 years and over per person	60/=
Child aged between 3 and 12 years	20/=

OBITUARY
DAPHNE ERICA GERRARD BACKHURST (1924 - 1991)

Daphne Backhurst, who died on 22 November last, had been Editor of the *EANHS Bulletin* for a number of years and did a great deal for this publication since it began life in September 1970 as the *EANHS Newsletter*. She was born in Cheltenham, England in 1924 when, as she liked to say, her parents were on leave from what was then Tanganyika where her father, Capt Eric Reid MBE, was in the Administration.

For most of her professional life she worked as a laboratory technologist at the Veterinary Research Laboratory ("The Vet Lab") at Kabete. Following her marriage in 1965, she had to resign from government service as was the law in those days for married women, but she soon began laboratory work again at the East African Veterinary Research Organization at Muguga. Later she worked at the Jockey Club's lab at Nairobi racecourse.

Daphne was much involved with ringing, especially during the 1960s and '70s concentrating, with her husband Graeme, on Yellow Wagtails at Nairobi sewage farms and at roosts in the outer suburbs; waders and other birds at Lakes Nakuru, Naivasha, and Magadi; and on warblers and small thrushes at Ngulia in Tsavo West. She was at Ngulia at the very beginning, from 11 December, 1969, and continued to take part in the annual ringing activities there each November and December right up to a few days before she died.

Graeme Backhurst

DAPHNE BACKHURST: AN APPRECIATION

Lorna and I knew Daphne for only four of her sixtyseven years, and our only qualification for writing this appreciation is the affection and respect we had for her. The affection came more or less instantaneously. The respect grew with time as we came to know her better and to appreciate the difficulties she lived with and the everyday courage with which she coped. Some of these difficulties (as with us all) were self-inflicted - how many times did her friends despair at seeing her light up another cigarette even as she was gasping for her next breath? Others, like her bad back and feet (caused by riding accidents) were part of the normal harvest of misfortune that comes from an active and engaged life. And her struggles to get to grips with computers and word-processing were part of the age in which we live.

Daphne coped because she was a woman of character, intelligence and humour, and because she was able to draw strength from language, music and nature. She was the daughter of a gifted linguist and she loved good writing. She subscribed to the Sunday Telegraph and the Spectator because

of this love and because she agreed with their politics. She was always keen to go to a good concert, either in Nairobi or on her travels abroad, and she also loved listening to her extensive record collection at home. She very much enjoyed music videos, especially shared with friends. One on Sir Thomas Beecham gave her enormous pleasure - the combination of his wit and his music was perfectly suited to delight her.

In the world of nature her major passions were for birds, horses and dogs. She never missed the ringing at Ngulia, and left part of her estate to the bird ringing fund of the EANHS. She had been a notable horsewoman in Kenya, and she regularly attended the weekend races, sometimes, but not as often as she would have liked, returning home richer than when she left. For many years she bred and kept Scotties. Her Jack Russell terriers, Toddy, Emma and (later) Bess, were much loved companions, and Emma's death from strychnine poisoning hit her hard.

When you were invited to lunch or dinner at Daphne's it was generally a good idea to have a snack beforehand, but what the food lacked in quantity, it made up for in quality, and the pleasure and interest of her company made such an occasion always one to look forward to. True, there were dark days when she was depressed and days when she could be *kali*, but, except on the worst of these, an appeal to her ironic sense of humour would dispel the clouds and elicit a quick smile. On New Year's day last year I recited Macbeth's "Tomorrow and tomorrow .." speech to her, and at her request wrote it down for her with a "Happy 1991" message. It was a characteristic way for us to start the year.

Daphne was deeply involved in most aspects of the running of the *EANHS*. She was, for a brief time, secretary; she was an active member of the Executive Committee, a member of the Editorial Board of the *Journal*, and Editor of the *Bulletin*. She typed almost all of the Bulletins herself, first on stencils and then using a computer for later typesetting. Except during the last few years, she also ran the stencils herself and did the collating. Unofficially, she was a constant assistant in the office, taking over the responsibilities of running it when the Hon. Secretary had to be away. All of this work she did completely voluntarily with only the occasional repair to her typewriter being paid for by the Society.

It was in 1991 that the Executive Committee voted her an Honorary Life Member in thanks for her many services to the Society. Despite deteriorating health, she continued to produce the ***Bulletin*** as regularly as possible over the last two years. She was working on the present issue until a few days before her death and would have had it ready for distribution in December. Its lateness is but one measure of how much the Society had come to depend on her.

Ian Gordon and Lorna Depew

MEMBERSHIP:
This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the Joint Society-National Museum Library (postal borrowing is possible); a copy of the EANHS BULLETIN every four months and a copy of each Journal published during your period of membership. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

JOURNAL:
The Society publishes the Journal of the East Africa Natural History Society and National Museum. Each issue consists of one paper; sometimes two or more short papers may be combined to form one number. Several may be published during one year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

EANHS BULLETIN:
This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS BULLETIN), P.O. Box 24734, Nairobi, or P.O. Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs can be published.

SCOPUS:
The Ornithological Sub-Committee publishes this bird journal five times a year, cost Kshs.100 per annum. All correspondence to D.A. Turner, P.O. Box 48019, Nairobi, Kenya.

EANHS MEMBERSHIP SUBSCRIPTION RATES PER ANNUM

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Institutional (schools, libraries)	Kshs 100	US$ 25 or UK£ 16
Full Local and Overseas	Kshs 100	US$ 11 or UK£ 7
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Student (full time student incl. university undergraduates; receive no Journal)	Kshs 20	US$ 8 or UK£ 5
Life Membership	Kshs1500	US$144 or UK£ 90

Subscriptions are due by 1 January. From July you may join for Kshs 50 and receive publications from that date. Application forms for membership are obtainable from the Secretary, P.O. Box 44486, Nairobi, Kenya.

THE EAST AFRICA NATURAL HISTORY SOCIETY

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BULLETIN

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BIRDS OF OMEN AND LITTLE FLYING ANIMALS WITH WINGS

The following notes set out to solve a simple linguistic puzzle: why do the Mijikenda of the East African coast have more than one word meaning "bird"? Why is the generic term for avifauna in some dialects the name of a particular species in others? And why do some Mijikenda dialects have no special term at all, but refer to birds in general by circumlocutions such as "little creatures", "flying animals" and "animals with wings"? The answer to these questions leads far beyond an account of the principles or accidents of local taxonomy. Perhaps surprisingly, it reveals something of a forgotten episode in coastal history; while in general it provides an introduction to the relatively unexplored field of ethno-ornithology, in this case as exemplified by the practices and beliefs of the Mijikenda.

First, a few remarks about the people and language in question. The Mijikenda inhabit a large part of the East African coast and its immediate hinterland, between the Tana River in the north and the Usambara Mountains in the south. Until relatively recently they were known as the Nyika or "people of the wilderness" in implied (and unkind) contrast to the urbane Swahili of the littoral. Their modern name is a reference to the original "nine villages" or *kayas* in the lowland rain forest said to have been occupied by the different ethnic groups which comprise the Mijikenda today: the Giriama, Kauma, Chonyi, Dzihana, Kambe, Rihe, Raßai, Duruma and Digo. All of these people speak mutually intelligible dialects of the same language, also called Mijikenda. Its closest linguistic relatives are Pokomo, Comorian, Swahili and Elwana, which together with Mijikenda form the Sabaki group of the North East Coast Bantu languages. The dialects of Mijikenda, meanwhile, can be divided on phonological grounds into two groups, northern and southern. Southern Mijikenda consists of Raßai, Duruma, and at least two varieties of Digo: the remaining dialects, the most widely spoken of which is Giriama, belong to the northern group. Available evidence suggests that these two groups began to diverge less than 500 years ago and that the emergence of the modern Mijikenda dialects thus postdates the first appearance of the Portuguese on the East Africa coast.

The Mijikenda dialects share most items of basic vocabulary. The word for "bird", however, is not shared in this way: instead a number of different terms are in use. To make matters more complicated, it seems that their application varies within as well as between dialects. Moreover, it is evident that this usage is in a continuing process of change, and has been since records of the language were first made by the missionaries Krapf and Rebmann in the middle of the last century.

Basically three terms are involved: *nyuni*, *ts'ongo* and, variously qualified, *nyama*. *Nyuni* is recorded as the generic term for birds in Dzihana, in 19th century Raßai, and among some, but by no means all, speakers of the northern and southern varieties of Digo. In Duruma, however, it refers solely to woodpeckers, one and probably more species of the family Picidae. In Kauma and

northern Digo *nyuni* is also recorded as referring to a particular bird species, though whether these are woodpeckers too remains to be clarified. The second term, *ts'ongo*, has a much wider currency as a generic term: it has been recorded with this meaning in all the dialects except Dzihana (on which lexical information is too sparse for its use to be ruled out) and Duruma. In Duruma, though, *ts'ongo* is the name of a bird, otherwise unidentified, which feeds upon sorghum and other grain crops. Early records indicate that *ts'ongo* had the same restricted meaning in 19th century Raßai and suggest that it has only displaced *nyuni* as the generic term for birds in the relatively recent past. The third word, *nyama*, is the common Mijikenda term for animals (and their meat) and appears in a number of different forms and expressions. In Duruma *nyama ya kuburuka*, literally "flying animal", is the generic expression for a bird. Similar phrases, meaning "animal with wings" are recorded for northern Digo (*chinyama cha maba*, *mnyama wa maba*) as well as Giriama (*nyama wa mahaha*). Giriama also use the diminutive form *kanyama*, "little animal". The overall result, as can be seen, is an extremely irregular pattern of usage and distribution which does not, for example, conform neatly to the division of Mijikenda into northern and southern groups nor the further subdivision of these into individual dialects.

Given the relative youth and closeness of the Mijikenda dialects, it is unusual to find their speakers at variance over the term for such a basic feature of everyday life. The coastal mosaic of forest and shrub hosts a rich avifauna which the Mijikenda are much less indifferent to than a quick glance at their generic terminology would suggest. Birds play a significant practical role in the lives of rural Mijikenda, and not just as crop pests or shooting practice for children. They provide an occasional source of meat as well as other specialized products like the feathers (especially of vultures) for fletching arrows. Perhaps more importantly, birds act as sensitive indicators of changes in the weather and local environment, and they help to identify, for example, the most poisonous *Acokanthera* trees or, in the case of the Black-throated Honeyguide, the sources of wild honey. Their economic importance is underlined by the fact that the Mijikenda have a large vocabulary to describe the different bird species they know (but none, for example, to describe different kinds of butterfly). Thus the published dictionaries, although they are far from complete, include more than one hundred different names of birds, and there are no doubt many waiting to be recorded, not to mention identified. Why then do some Mijikenda call birds "flying animals"? And why are there such basic differences in terminology that one speaker's bird is another's particular species and vice versa?

The answer to these questions turns upon the role which birds play as omens of the future, and the way in which Mijikenda beliefs in this respect have developed over time. To begin with, let us look at the general form of these ideas. Like their Swahili neighbours, not to mention many other peoples in the region, the Mijikenda believe that certain birds, most notably owls, are harbingers of misfortune. On top of this, however, the Mijikenda have a much more specific set of beliefs about the role of birds as omens. We owe the most detailed description of these beliefs, or at least one variant of them, to J.B. Griffiths, a Methodist missionary who lived among the Duruma of Mazeras for some 35 years. His account, which was published in 1935 (see the bibliographic note at the end of this article), is reported in full below:

"They [the Duruma] are in the habit of taking the auspices of two birds which are called *Jelele* and *Kokota*. *Jelele* has a deep blue coat and a red beak, and makes its home in a hole it burrows in the bank of a watercourse or a pit. It is never heard except when it screams in flying from tree to tree. *Kokota* has a brown coat with regular rows of white circular spots and a reddish crest, and makes its home in a hole it digs the hole of a dead tree. It is frequently heard to call "Nje-nye-nje" after a spell of tree-tapping, the taps being so rapid that one can hardly take count of them. They are shy birds and not often seen near dwellings.

The nature of the omen is determined by the position of birds at the time one hears them. If the birds are in front of one, it is a warning not to proceed; and if they are behind one, it forebodes trouble in one's absence. If they are on one's right, it foretells of good health with scarcity of food; and if they are on one's left, it foreshadows plenty of food and poor health. But if the one is on one's right and the other is on one's left, or if a *Jelele* or a *Kokota* is on one's right and another *Jelele* or *Kokota* is on one's left, the omen is that of good health and success.

The second, fourth and eighth of the first and second decades of the moon and the second and fourth of the last three eight days of the moon are called the "Days of the Birds". They are the auspicious days of the people. Travelling, removing, building, cultivating, planting, harvesting, sacrificing: in fact, everything of importance, domestic or tribal, is commenced on one of these days.

It was well known to me that they were in the habit of listening to these birds, but it was a long time before I understood why they did so. One morning, when I was on a journey, a *Jelele* flew screaming across our path, and I heard the man who was in front of me mutter to himself: "I wonder whose shade that is". That gave me my first cue. I have toiled many years among these people since then, and I have no doubt that they regard these birds as the mouthpiece of the shades, and that is why they consult them. They listen to the birds to find out the disposition of the family shades."

This passage provides a fascinating picture of the way in which a people's ideas about birds can permeate their everyday lives. Unfortunately nothing more is known (at least to this author) about the *jelele*, its identity (could it be a kingfisher?) and its role as a bird of omen. The *kokota* can be positively identified as a woodpecker, if not the Nubian Woodpecker, *Campethera nubica*, then one of the related species with a red crown or nape - or, equally probable, all these together. *Kokota* is also recorded as a term for woodpeckers among the Giriama and Raßai. Meanwhile, contemporary Duruma from the Taru area contradict Griffiths by saying that their name for this bird is *nyuni* and that it is the Digo who call woodpeckers *kokota*.

Whatever the case, there are a number of indications that the ideas and practices described by Griffiths did not originate with the Mijikenda, but were borrowed from elsewhere. Both *jelele* and *kokota* appear (because of the presence of the non-inherited phonemes /j/ and /t/) to be loanwords in Mijikenda, and

though the latter is clearly related to Swahili *gogota*, also a woodpecker, the immediate origin of both words is unclear. More significant, perhaps, is the fact that analogous beliefs do not exist among, or at least have not been described for, the Mijikenda's closest relatives, the Pokomo, Swahili and other speakers of Sabaki languages. If this specific set of ideas about birds of omen did not originate with the Mijikenda themselves, then where did it come from?

A first clue comes from the following passage, taken from Gerhard Lindblom's classic 1920 monograph on the Akamba. After mentioning the role of owls as birds of ill-omen, Lindblom goes on:

> "The most important and best known of all prophesying animals is also a bird, the *ngomakomi*, a red-headed species of woodpecker, to which the natives listened, especially in former times, before marching out on plundering expeditions. It is considered to be a good or bad omen according to the side on which one hears his pecking. The interpretation varies to some extent in different parts of Ukamba; the following detailed account is from Kikumbuliu, the south-east part of the country.
>
> If the bird is heard straight in front, one will "see blood", *i.e.* get scratched in the thickets, be gored by a rhinoceros or wounded in fighting, etc.; which of these things is most probable depends on the object of the expedition or the environment one is in or is going to be in. To hear the bird in front in an oblique direction and high up is also a bad sign, whereas if it is low in the same direction it only means that the listener will return without having effected his object. The left side is, on the other hand, the good side (in other districts the bad one), and if the bird is heard on that side, one has prospects of acquiring women, cattle and other wealth. Finally, if it is heard from behind, it denotes that the listener will carry a burden, so that if he is going out hunting he will probably shoot something, if he is about to cut the honeycombs from the beehives, he may be pretty sure of a good result, and similarly with those who are going to steal cattle, etc.
>
> This woodpecker is looked upon as a messenger from the ancestral spirits; it is not killed, and its flesh may not be eaten by men. This prohibition does not apply to women, probably because as a rule they do not know of this bird, as they seldom have cause to go out into the desert, where the bird principally stays. In the immediate neighbourhood of Machakos, where trees are very rare and the bird is consequently not found, only a very few people seem to know of it. The Akamba who live there also carried out most of their campaigns on steppe, where they probably had no opportunity of observing it.
>
> The natives state that even certain animals, such as the giraffe, wild boar, etc. are so shrewd that they listen to and understand the *ngomakomi*'s call."

Lindblom continues his account by giving the special Kamba names for the different directions from which the woodpecker is heard, before concluding with an anecdote about a travelling party which turned back home after hearing the birds call on the second day of their journey. The beliefs he describes are

sufficiently similar to those of the Mijikenda to enable us to posit some connection, but different enough to render it unlikely that they were borrowed directly by them. Similar ideas are also held by at least two East Nilotic peoples, the Turkana and (as Lindblom also noted) the Maasai. Again, some kind of connection can be posited, though it is not clear between whom or in which direction, and further elucidation of this wider pattern of diffusion remains beyond the scope of the present article.

The connection between the Kamba and the Mijikenda is a tangible one. Most Kamba live far to the west of the Mijikenda, the two peoples separated by the vast semi-arid expanse of the Tsavo. For the past 200 years or more, however, Kamba have traded with the coast, while by the mid-19th century significant numbers of them were settled permanently in close proximity to the Raßai and Duruma. The Kamba also speak a Bantu language, though it is not very closely related to Mijikenda nor even a member of the North East Coast group to which the Sabaki languages belong. Instead, Kamba speech is classed together with that of the Kikuyu, Meru and others living in the vicinity of Mount Kenya as belonging to the Central Kenya Bantu, or what is otherwise known as the Thagicu group of languages. Most of the cultural and linguistic ties between the Mijikenda and Kamba arose not as a result of their direct contact but through the historical influence of another member of this group, the Segeju. And it is to these people that we must look to find the immediate source of Mijikenda ideas about birds of omen.

Who are or were the Segeju? It is tempting to say that if Segeju history had not happened it would have been impossible to invent; although this is precisely what earlier historians, misled by the Segeju's own traditions, tried to do. A reliable picture, informed by linguistic research, has only begun to emerge in the past decade, and many of its details have yet to be filled out. The following is a brief outline.

Contrary to earlier speculation, the linguistic evidence makes it clear that the Segeju originate from the same area as other Thagicu speakers, most probably somewhere on the upper reaches of the Tana River. Indeed the different names by which the Segeju are known are all variants of the name Thagicu, which was given to the language group because of its widespread occurrence in the historical traditions of different members: "Segeju" itself is derived from the Swahili version (*wasegeju*, whereas the Mijikenda call them *asagidzu*, the Sagidzu). Sometime in the 16th century, possibly before, the ancestors of the modern Segeju migrated down the Tana River and settled near to the coast. There they became involved in shifting patterns of conflict and alliance with their neighbours, including the different Swahili communities in the area. This brought them to the attention of Portuguese visitors to Malindi, where the first reference to the Segeju dates from 1569. Before the end of the century they had achieved considerable fame for their military exploits in support of the ruler of Malindi. The Portuguese portrayed them as barbarous pastoralists who subsisted on fresh blood and milk, fearless warriors who kept the genitals of their victims as trophies of war. This notoriety was, however, short-lived. The Segeju were pushed south by another, much larger, group of pastoralists, also responsible for destroying many Swahili settlements along the coast: the Galla or Oromo. By the mid-17th century a number of Segeju had settled in and around Bwiti on the

north-east edge of the Usambara Mountains. Their modern descendants are mixed farmers who call themselves Daisũ (cognate with Thagicu) and still speak a Thagicu language. Meanwhile, still in the 17th century, a significant section of them moved down to the coast where they acted as mercenaries for the Swahili of Vumba Kuu (near Vanga), subsequently settling in the territory they had helped to conquer. Today most of these Segeju live on the coast between Tanga and the Kenya-Tanzania border, where they speak a dialect of Swahili and/or a variety of Digo as their mother tongue.

The history books are largely silent about past relations between the Segeju and Mijikenda. Likewise the Segeju themselves, although they do recall more recent relations with their Digo neighbours. By contrast, recorded Mijikenda traditions have a lot to say about the Segeju, especially their shared conflict with the Galla and subsequent flight south. Some northern Mijikenda - Chonyi - even go so far as to claim that they were once Segeju. This is not as far-fetched as it may seem, if it is taken to mean that some Segeju were absorbed by the Mijikenda during this early period. Indeed, it becomes a very real possibility when the linguistic and other cultural evidence is considered. This evidence indicates a very close interaction between the Mijikenda and the Segeju in the past. The Mijikenda lexicon, for example, is replete with loanwords from a Thagicu language which can be conclusively identified as that once spoken by the Segeju, the direct ancestor of modern Daisũ. Similarly, and in conjunction with the linguistic evidence, many cultural practices of the Mijikenda can be traced to the Segeju. The picture which emerges confirms, corrects, and at the same time is much richer than that bequeathed to us by the Portuguese. It shows, for example, that the Segeju were much more than just livestock herders and efficient fighters: they were also traders and left an important legacy of political organization and ritual practice.

Mijikenda ideas about birds of omen are part of this legacy. The existence of parallel beliefs among the Kamba, close relatives of the Segeju, is only one indication of this. Much stronger evidence, however, comes from the terminology employed by Mijikenda to refer to omens and the practices associated with them. Many of these terms were borrowed directly from the Segeju, as can be surmised from their phonological characteristics and the fact that cognates can be found in other Thagicu languages. This includes the word for a portent or ill-omen, *mudhana* (as recorded in Giriama and 19th century Raßai). Likewise verbs reported to mean "to seek an omen from the birds" (given as *kudhecha* or *kudheja*) and "to meet with a good omen" (recorded as *kudhenja*). Also belonging to the same set is another expression recorded from Raßai, *kuera nyuni*, "to take the bearing of birds when seeking an omen from them", recalling that it is the direction in which they are heard which determines the interpretation of the omen. The wider vocabulary of prediction and prophecy is similarly permeated with Segeju loanwords. One of these is the name of a bird, called *madhio* or *mario*. These are described as large birds which are rarely seen except in flocks circling in the sky, and whose appearance is taken as a sign that the rains are imminent.

This brings us back to our original puzzle: why do the Mijikenda have different generic terms for birds? The answer lies with the Segeju and the distinctive set of ideas about birds of omen which they introduced. Before their

intensive contact with the Segeju it seems that the Mijikenda had a far less developed notion of birds as omens, something akin perhaps to their current belief in the misfortune presaged by owls. Like other Sabaki speakers they had inherited a single generic term for bird, *nyuni*, which may already have had the secondary and extended meaning "omen", as it does in Swahili and the modern Thagicu languages. The Segeju changed all that. By introducing a new and more pervasive complex of ideas about birds of omen they unwittingly set in motion the processes of semantic change and innovation which have given this particular segment of Mijikenda ethno-taxonomy the heterogeneous shape it has today. In the speech of many Mijikenda the secondary meaning of *nyuni* as an "omen", including omens drawn from sources other than the birds, became its primary connotation. Meanwhile *ts'ongo*, the name of a common and gregarious species, began to take its place as the generic term for birds. The current distribution of these terms suggests that this process began in one of the northern dialects, probably Giriama, and has since been spreading south. In 19th century Raßai *nyuni* was still the generic term for both birds and omens: today, however, *ts'ongo* is used for birds. The latter name has also spread further south to the Digo: in this case, though, it has not succeeded in erasing earlier usage or preventing the adoption of other alternatives.

These alternatives stem from a different, but parallel, process, initiated by the speakers of another southern Mijikenda dialect, Duruma. Among the Duruma *nyuni* became restricted in meaning to the bird species which provides most of their omen: the woodpecker described by Griffiths and called *kokota* by other Mijikenda. In place of *nyuni* as the generic term for birds the Duruma adopted a neologism: *nyama ya kuburuka*, "flying animal". Variations upon this neologism have since spread to other Mijikenda, including the Digo ("animal with wings") and Giriama ("little creature"), perhaps in response to the confusion caused by the conflicting connotations of *nyuni* and *ts'ongo*. The result is today's complex and cross-cutting pattern of usage. To all intents and purposes, this is still in a state of flux and it may only be resolved in the long run by adoption of the Standard Swahili term *ndege*, which is already gaining some currency among young and educated Mijikenda speakers.

If there is a lesson to be drawn from this, it is surely that there is often much more to a name or a classification than even its users might suspect. Ethno-taxonomy is typically treated as little more than a guide to identification, a diversion from more serious pursuits, and at best a source of material for parentheses and footnotes. As a serious topic of study ethno-ornithology is virtually non-existent, and it is no accident that most of the names of birds cited above await proper identification. However, the wealth of information contained in these names, not to mention the associated practices and beliefs, suggests that the collection and study of data of this kind is far from worthless, and is ignored at the cost of a fuller understanding of the human and natural environment in which we live.

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In writing this article I have drawn upon a large number of sources in addition to my own research among the Mijikenda. Many of these sources are listed in Thomas Spear's standard, though now outdated, study *The Kaya Complex: A*

History of the Mijikenda People of the Kenya Coast to 1900 (Nairobi, Kenya Literature Bureau, 1978).

Linguistic data are taken from L. Krapf and J. Rebmann (ed. T.H. Sparshott) *A Nika-English Dictionary* (London, Society for Promoting Christian Knowledge, 1887) and W.E. Taylor *Giriama Vocabulary and Collections* (London,S.P.C.K., 1891), as well as more recent work by Thomas Hinnebusch, Philip Sedlak, Wilhelm Möhlig, Derek Nurse and myself. Among the sources on the Segeju special mention should be made of Derek Nurse's paper "Segeju and Daisũ: A Case Study of Evidence from Oral Tradition and Comparative Linguistics", *History in Africa* 9, 175-208 (1982).

The two passages reproduced in the text are taken from pp. 276-277 of J.B. Griffiths "Glimpses of a Nyika Tribe (Waduruma)", *Journal of the Royal Anthropological Institute* 65, 267-296 (1935) and pp. 293-294 of Gerhard Lindblom *The Akamba in British East Africa: An Entomological Monograph* (Uppsala, Appelbergs Boktryckeri Aktiebolag, 1920).

Otherwise Mijikenda, and in particular Kauma, beliefs about birds are set in fascinating context in Maurice Kambishera Mumba's novel *The Wrath of Koma* (Nairobi, Heinemann Kenya, 1987). Finally, and for an introduction to the ethno-ornithology of another Kenyan people, readers are recommended to turn to Anthony Barrett's *Akiyar A Ngiturkana: Turkana Way of Life* (Nairobi, New World Printers, 1988), "a book of poems, stories and pictures of birds found in Turkana country".

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CARDINAL ATTACKS NUBIAN IN THE KERIO

On 4 October 1991 in a garden in the Kerio Valley a male Nubian Woodpecker *Campethera nubica* was excavating a hole in a thin, dead branch of a *Tipuana tipu* tree when he came under attack from a male Cardinal Woodpecker *Dendropicos fuscescens*. The smaller Cardinal flew directly at the Nubian but its attack was fended off by a sharp stab of the bill from the larger bird. Unharmed, the Cardinal allowed itself to fall approximately 60 cm before clinging upside-down to a lower branch fanning its wings and uttering a chattering call (not the normal high-pitched trill). After about five seconds of wing flapping it closed them and, still clinging upside-down, vented its frustration by aimless hammering on the branch.

Once the Nubian, assuming the attack was over, continued its excavation the Cardinal would again resume the attack. Exactly the same would happen, with the attack being fended off by a bill stab when the Cardinal would drop, catching the branch below, clinging upside-down etc. This occurred for four rounds, lasting approximately thirty seconds all told, when eventually the Cardinal flew away after yet another bill stab from the Nubian. Once the attacker had left, the Nubian completed its excavation eating the emerging insects for a further ten seconds or so.

Norman and Gail Wilson, c/o Kenya Fluorspar Co., P.O. Private bag, Eldoret.

NOTES ON A VISIT TO TALAGWE MOUNTAIN, KILOSA DISTRICT, TANZANIA

Talagwe mountain (6°00' S 37°10' E) is an isolated peak rising out of the eastern central plateau at an altitude of 1170 to 1857 m in the rainshadow of the Nguru Range. Although surrounded by dry country, the peak is sufficiently tall to attract clouds, and is capped by montane forest. The forest is within a Catchment Forest Reserve of 1085 ha, and is an important source of water for the surrounding villages.

The lower parts of the forest are rather tangled, with a broken canopy 15 to 20m tall, dominated by *Albizia gummifera* and *Diospyros natalense*. Other trees include: *Bersama abyssinica*, *Bridelia micrantha*, *Canthium oligocarpum*, *Cassipourea malosana*, *Celtis africana*, *Cola greenwayi*, *Cussonia holstii*, *Cussonia spicata*, *Draceana steudneri*, *Dombeya torrida*, *Garcinia volkensii*, *Maesa lanceolata*, *Pheonix reclinata* and *Vepris stolzii*. Upper parts of the forest have an intact canopy of 20 to 30m dominated by *Rapanea melanophloeos* on the upper ridges. Trees here include: *Albizia gummifera*, *Aningeria adolfii-friedericii*, *Bridelia brideliiodes*, *Macaranga kilimandscharica*, *Neoboutonia macrocalyx*, *Strombosia scheffleri*, *Syzygium guineense* subsp. *afromontanum* and *Xymalos monospora*.

Perhaps not surprisingly, a mist-shrouded peak that is a source of water in otherwise dry country has cultural significance to the cattle keeping Wakaguru who live nearby. As with the closely related Wagogo, the Wakaguru suffered from Maasai cattle raids, and the spirits of Talagwe were called upon to assist in time of strife. We were told the story of Mzee Chilongola Jenga, who lived at Idebo just below the mountain, who was able to make "smart" arrows. During a conflict in the 1960's these arrows proved to be decisive technology, as they were even able to fly around a line of policemen to find their mark! Such surgical precision in attack allowed the Wakaguru to carry the day.

Another important traditional function of the forest was a dry season grazing ground. This may explain the tangled growth and broken canopy of the lower slopes. Similar tangles, apparently not the result of timber extraction, occur in Haraa forest near Babati and Burko forest near Monduli. In Monduli Forest Reserve local pastoralists are actively creating glades in the forest by lighting fires at the base of trees in order to burn through the bole causing the tree to fall. The tangles on Talagwe could well result from such a practice in the historical past. Certainly such tangles do not quickly become forest again once left undisturbed. The forester, Daniel Paresso, described tangles in Haraa during the 1960's very similar to those that exist today. These tangles are so thick that movement in them is extremely difficult, and they certainly would not have been grazed in the meantime. When the clearings were created is difficult to say. Perhaps they date back to the rinderpest epidemic of the 1890's which devastated cattle stocks, in which case they provide further evidence of the slow nature of natural forest regeneration following disturbance.

Another interesting aspect of Talagwe is the occurrence of Eastern Arc plants, such as *Memecylon deminutum*, in undisturbed forest on the peak. As we found to our cost, the forest must be largely maintained by mist during the dry season. Arriving in the early morning in July, sometime since the last rain, cloud hung over the peak. During our ascent, springs on the lower edge of the forest were clear and running. On our return they had dried up in the heat of the day, and late afternoon tea in Iyogwe was more than welcome. Rare plants like *M. deminutum* must either have dispersed onto Talagwe, or are relics of formerly more widespread forest, remnants of which have been maintained by mist. The dispersal hypothesis seems more likely, which would show that Eastern Arc endemic plants can move around. This could indicate that the absence of such plants from outside the Eastern Arc is due to climatic or soil factors, rather than an inability to disperse.

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BREEDING ASSOCIATION OF MARABOU STORKS WITH SACRED IBISES

Breeding records of Marabou Stork *Leptoptilos crumeniferus* at Shinyanga, Tanzania have been described by Easton (1975, 1976) and Mlingwa (1989). In none was nesting association with other bird species mentioned. Elsewhere however, Marabou Storks are known to associate during nesting with Pink-backed Pelicans, *Pelicanus rufescens* (Pomeroy 1973), Yellow-billed Storks, *Mycteria ibis* (North 1943), and occasionally with herons and cormorants (Brown *et al.* 1982).

On 11 July, 1991 in Shinyanga town, I observed a mixed nesting colony of Marabou Storks and Sacred Ibises *Threskiornis aethiopica*. This colony was situated near Shinyanga district headquarters, in a flat crown of *Acacia tortilis* with 17 Marabou nests and 30 nests of Sacred Ibises, all intermingled in the same tree. Most of the adult marabous at the colony had downy chicks, a few were still incubating, whereas some nests of Sacred Ibises were occupied with nearly fully-fledged young, others had downy chicks, and a few nests with incubating adults. Since I have been unable to find anything in the literature of Marabous nesting in association with Sacred Ibises, this habit should be a first record for the species. Furthermore, although the Sacred Ibis can form mixed colonies with some other birds (see Douthwaite and Miskell 1991), intermingled nesting appears to be known only with spoonbills (Brown *et al.* 1982). An observation made at Shinyanga is thus an additional record for *Threskiornis aethiopica*.

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DISJUNCTION IN THE DISTRIBUTION OF *HUERNIA ASPERA*: THE GAP NARROWS

Huernia aspera (Asclepiadaceae), a species with creeping succulent stems and dark purple bell-shaped flowers, was described by N.E. Brown in 1887. The species was described from cultivated material at Kew sent in 1886 by Sir John Kirk, then Governor of Zanzibar. No type locality was cited, but Brown (1887) stated that the plant "probably is a native of the region of Zanzibar". This might suggest to a modern reader that the type locality is in Zanzibar, which today refers to the island off the coast of Tanzania. This is uncertain because Kirk supplied no locality data with the plants that he sent to Kew from Zanzibar, and it is now known that many of his plants were collected from the African mainland. It should also be noted that at the time of Kirk the name Zanzibar referred to a Sultanate that extended some distance into mainland Africa, including parts of present day Kenya and Tanzania.

In a recent revision of the genus, Leach (1988) gives the type locality as "?Zanzibar", thus recognising its uncertainty, but gives no other records from Zanzibar or mainland Tanzania. He refers to three specimens from near Nairobi, and to one from near Liwonde, in southern Malawi. The species is known from several other localities in Kenya, mainly in the Rift Valley and bordering highlands, as indicated by Agnew (1974) and Bally (1942). An unidentified species of *Huernia* was reported to have been collected by B.D. Burtt at two localities in Tanzania, near Mpwapwa and near Iringa (White and Sloane, 1937), but no preserved specimens were cited and I have seen no references to these gatherings in later publications. With no definite records from Tanzania, there is a large gap in distribution, about 1500 km, between Kenya and southern Malawi.

During an expedition to Tanzania in 1990, a *Huernia* population was found on a rocky hill between Morogoro and Dodoma (*Carter, Abdallah & Newton 2652*). The plants were not flowering, but the long trailing stems suggested that they might be *H. aspera*. This tentative identification was confirmed when a collected specimen came into flower in my garden a year later. A flowering shoot has been preserved and deposited in Kew herbarium, and other specimens will be prepared and deposited in the national herbaria in Nairobi and Arusha when the plant flowers again.

This new gathering is of significance for two reasons. Firstly, it helps to close the gap in distribution between southern Malawi and the highlands of Kenya. *Huernia* plants are not very conspicuous in the field, as they are shade-loving and are usually hidden by other vegetation or large rocks, so it is likely that other populations remain to be discovered within the wide range of distribution. Secondly, this new collection site must be in or near the likely collection area of Kirk and his helpers, and hence it is now the nearest known locality to the unknown type locality. This new record supports the view of White and Sloane (1937) that the type locality was more likely to have been on the Tanzania mainland.

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POT LUCK OUTING, 15 DECEMBER 1991

We decided to go to the Kedong Valley. Our first stop was on the shoulder of the Ngong Hills, overlooking the Rift Valley, hoping to see raptors and the Stonechat. Instead we saw Hill Chat, Scarlet-chested Sunbird, Variable Sunbird, Schalow's Wheatear, Crombec, Purple Grenadier, Reichenow's Weaver, Red-rumped Swallow, African Rock Martin, Common Bulbul, Singing and Rattling Cisticola, Slate-coloured Boubou, Eastern Double-collared Sunbird and overhead an Augur Buzzard and some African Black Kites. In the distance we spotted a herd of giraffe, while below us cows and goats were eating grass, already rather dry.

A large fig tree by the rocky edge had rounded leaves, the upper surface shiny and fairly small fruit on long stalks; it was probably *Ficus glumosa*. A smaller tree in the same position was the Sandpaper Tree, *Cordia ovalis*. Leleshwa or *Tarchonanthus camphoratus* was a common bush here, very low, along with *Acacia drepanolobium*. *Lippia* sp., with white flower heads and aromatic leaves, was common and other shrubs quickly noted were stunted *Ochna* sp., *Euclea* sp., *Rhus natalensis*, and *Grewia* sp. which had on it some parasitic *Loranthus* in flower. *Psiadia punctulata* with its green shiny leaves was a common leafy herb. At ground level were buff-coloured *Commelina reptans*, *Felicia muricata*, the pale Mauve Daisy, yellow *Portulacca foliosa*, white *Chlorophytum* sp. with a rosette of wide green leaves and the yellow *Sida cuneifolia*. The tall herb, *Hibiscus fuscus*, distinguished by its black-brown hairy stem was common too.

We moved on down the hills, stopping briefly as the road levelled out. Overhead a pair of Augur Buzzard circled and called with an unidentified eagle. Then a falcon or kestrel with a white rump, pale and not visibly rufous, swooped and turned above us. Unfortunately we had no "bird experts" with us to help with these "difficult" birds. On a stone stood a European Wheatear while in the

thorn trees behind him were a White-headed Barbet and a European Spotted Flycatcher.

There was evidence of rain but it had quickly soaked away leaving much bare ground. A few rain flowers were still in bloom: the yellow *Bulbine abyssinica* and a few pink *Cyphia glandulosa*. The Ant-gall Acacia was covered with white flowers. The grey succulent, *Notonia petraea*, had full buds ready to open. A *Pavonia patens* with yellow flowers and soft leaves could be seen between the commonest woody herb, the low grey-leaved shrub *Justicia elliotii*, with its small bright purple flowers.

We continued into the Kedong valley spotting a beautiful Bateleur Eagle on the way, and Baboon sheltering under the trees as we passed through a heavy shower. Stopping by the road we walked towards cliffs on our left where we noticed nests in the crevices. A pair of Verreaux Eagle were spotted cruising along the edge of the cliffs. Did the nests belong to them?

All along the cliff top, outlined against the sky were clumps of *Dracaena ellenbeckiana* (syn. *D. kedongensis*), their thin branches topped by palm-like bunches of leaves. On the ground we noticed the spiny bushes and blue flowers of *Barleria spinisepala*. We were puzzled by a small tree with pale yellow flowered head, quite conspicuous on the steep slope below the ridge. Clambering up there we found it was *Steganotaenia araliacea*, one of the few Umbelliferae in Kenya. Noted also were *Combretum exalatum*, bearing a few dry winged fruit, *Acacia seyal*, with bright yellow flower heads and pale cream-yellow bark, now the commonest tree, with Leleshwa, where we had stopped. In between were *Commiphora* sp., *Rhus natalensis*, *Ormocarpum trachycarpum*, *Ozoroa reticulata*, *Acacia nilotica*, *Grewia tembensis* and a very few *Acacia tortilis*.

Many Grey Hornbill flew to and fro across the valley from tree to tree, calling each other in their piping flute-like way. We also saw Ring-necked Dove, Striped Swallow and Yellow-rumped Seed-eaters. On the way to our picnic site, overlooking Mount Suswa, we saw Kongoni. We ate our food under the only shady tree in sight, a small *Pappea capensis*. Just in front was another small tree common in drylands, *Boscia angustifolia*. Trailing over a rock at our feet was the succulent *Euphorbia gracilirama*. The Verreaux Eagles, now with an Egyptian Vulture, soared past us, hurrying towards Naivasha.

On our way back along the valley we saw Cape Rook, Kenya Rufous Sparrow and a family of Thompson's Gazelle. By now the sunshine had returned and the sandy road was drying out quickly. We spotted a few of the bright red *Hibiscus aponeurus* among the more common white *Hibiscus flavifolius*, tall herbs growing above the grasses along the roadside.

Both "birders" and "botanists" were satisfied with their morning's viewing! (The bird species mentioned can all be seen Williams' *Field Guide*. Trees can be found in *Trees of Kenya* by Noad and Birnie, and the herbs in Blundell's *Wild Flowers of East Africa*.)

Compiled by J. Wood and A. Birnie.

SOCIETY ANNOUNCEMENTS

IMPORTANT NOTICE: ANNUAL GENERAL MEETING

The Annual General Meeting of the Society will be held on Monday 11 May, 1992 in the Education (Ford) Hall of the National Museum, Nairobi. Nominations for Office Bearers and Members of the Executive Committee as well as matters to be included in the Agenda should be sent to the Hon. Secretary, Box 44486, Nairobi to reach her before 15 April 1992. Nominations for all positions on the Executive Committee are SERIOUSLY requested. Full particulars of all nominees, including their address and details of present employment (where applicable) should be supplied.

IT IS ESSENTIAL THAT NOMINATIONS FOR THESE POSITIONS BE RECEIVED.

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Vol 79 (194): Report on activity in the Northern crater of Ol Doinyo Lengai, July 1988 to August 1989. C. Nyamweru.
Vol 80 (195): An ecological checklist of the plants of Kiboko National Range Research Station, Kenya. N. Ndiang'ui.
Vol 80 (196): A provisional annotated checklist of the butterflies in Lake Manyara National Park, Tanzania. N. Cordeiro.
Vol 81 (197): Natural indicators of shallow groundwater in Kibwezi division, Kenya. M. Woodhouse.
Vol 81 (198): An ethno-botanical study of Gabra plant use, Marsabit district, Kenya. D. Styles and A. Kassam.
Vol 82 (199): Structure and function of african floodplains. J.J. Gaudet.

ERRATUM

'Lyaenid' should have been spelled 'lycaenid' in both the contents page and the title above the article on page 70. And, of course, the bones described by J. Kamau came from East Turkana. Our apologies for this. The Editor.

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EANHS CHAIRMAN'S REPORT FOR 1991 - DR. LEON BENNUN

Ladies and Gentlemen,

It is with great pleasure that I welcome you all to the Society's 82nd Annual General Meeting and take this opportunity to report on our activities over the past year. Unfortunately I must start this meeting on a sad note. Most of you will know that we have lost recently, in tragic circumstances, two of the Society's staunchest supporters: Mrs Daphne Backhurst and Mrs Jean Hayes. Both were long time members of the Executive Committee. Jean, although less actively involved in the Society's affairs of late, was for many years Editor of the Journal. Up to the time of her death, Daphne was Editor of the Bulletin, but this represents only a small part of her contribution to the Society, as she was an indefatigable assistant with whatever other work needed to be done. Daphne had recently been created an honorary life member in recognition of her contributions, and it is sad that she had so little time to enjoy this status. I can say with sincerity that they will both be sorely missed.

On to happier matters. Although the Society is now 83 years old, I am pleased to say that it shows no signs of senility and that we continue to have an active programme and an expanding membership. The Society's office continued to run smoothly and in this regard we owe a great debt of gratitude to Ms Lorna Depew, our Honorary Secretary, who continues to put in a tremendous amount of work, much of it perhaps invisible to most members. I also thank those who have volunteered to take care of the office in Lorna's absence, or who have assisted in office duties at other times, including Mrs Inge Ayres, Mrs Lise Campbell, Ms Lucy Gathara, Ms Maryanne Kamau, Ms Angela Kerrekhou, Mr Onesmus Kahindi, Mrs Judith Rudnai and Ms Heidi Schulthess.

It seems fair to say that we have had an excellent monthly series of lectures and films this year, and I would like to thank Mrs Judith Rudnai for ably organising this important aspect of our activities. To mention a few, we have heard talks on New Zealand plants, by Dr John Braggins; forest conservation in West Africa, by Dr Glyn Davies; seasonal pools in Nairobi, by Fleur Ng'weno, beautifully illustrated with slides by Bettina Ng'weno; wetland conservation, by Dr Geoff Howard; land use in Kenya, by Dr Mike Norton-Griffiths; and management of black rhinos, by Dr Rob Brett. We have had consistently good attendance for our lectures this year, and I would like to thank members for supporting our guest speakers in this fashion. How much this can be attributed to the fact that tea and biscuits are now available is a matter for debate; in any case, we hope that this innovation gives members who arrive early a chance to socialise and relax.

Field excursions have continued, albeit with a few hitches and cancellations, and among others we have had day or weekend outings to Olorgesailie, Lake Nakuru, Ulu Ranch and Bantu Lodge. I thank all those who organised and led these excursions, particularly Mrs Anne Birnie and Ms Yvonne Malcolm-Coe. I hope that we will be able to arrange a fuller programme of excursions, especially weekend trips, during the coming year. I am happy to say that our monthly "pot-luck" outings have been resurrected, and I thank Mrs Janet Wood and Mr Christopher Hill for the time and energy they have put into organising and leading these. The Society's Wednesday morning birdwalks continue weekly, rain and shine; this is a remarkably consistent achievement and I wish to thank Mrs Fleur Ng'weno, Ms Maryanne Kamau, Mrs Pat Wootton and Mrs Damaris Rotich for their efforts.

The Bulletin continued to appear regularly under the editorship of the late Daphne Backhurst. I am happy to say that Dr Edward Vanden Berghe has now stepped in to take

on the editorship, and I am confident that the same high standard of production and contents will be maintained under his able direction.

Mr Charles Dewhurst, with the support of the Journal Editorial sub-Committee, has continued to do an excellent job of producing the Society's Journal. Parts number 197, 198 and 199 were published during the year. The quality of the Journal remains high, and this is reflected in the increasing number of high- quality submissions that we are receiving. The Eden Wildlife Trust has continued its financial support towards the Journal's production, for which I wish to extend the Society's gratitude.

During the past year a sub-committee of the Executive Committee has been holding detailed discussions with the National Museums of Kenya regarding the Journal, the intention being to put this publication on a sound financial and editorial base as a joint venture, and to avoid the duplication of effort that presently exists. I am happy to say that an arrangement satisfactory to both parties has now been reached, which, if the necessary constitutional changes are approved by this meeting, should result in a stronger Journal with a more secure future.

Among its other activities, the Society's Ornithological Sub-committee continued to produce *Scopus* and to organise the annual bird-ringing programme at Ngulia. *Scopus* has now built up an enviably high reputation as a regional journal, largely due to the dedication and hard work of its editor, Mr Graeme Backhurst. This reflects favourably on the Society as a whole, and I would like to offer Graeme our thanks.

Our Hon. Treasurer, Ms Mairead O'Flynn, left Kenya last December. Mairead performed an excellent job of keeping our financial affairs in order, and I would like to express my sincere thanks for all her hard work. We have been fortunate to persuade Mr Brooks Childress to take over the accounts from Mairead; he has done a commendable job since taking over and will have some recommendations to put to this Annual General Meeting in due course. The joint library sub-committee continues to function smoothly, and I thank our Hon. Librarian, Miss Rosalie Osborn, Ms Aisha Owano, the Museum's Librarian, and the other members of the sub-committee in this regard. The new rules and borrowing procedures in the library appear to be working well.

At a Special General Meeting last year, the Society amended its objects to make it clear that we are concerned with the conservation of the natural environment as well as the study of natural history. This opened the way for consideration of requests by two volunteer groups, the Kenya Section of the International Council for Bird Preservation and the Kenya Wetlands Working Group, to become sub-committees of the Society. Formal negotiations are now complete and I am pleased to say that Memoranda of Understanding have been signed, or are about to be signed, with both groups. I believe these associations will be mutually beneficial, and will strengthen the Society's activities and enhance its profile.

Our relationship with the National Museums of Kenya remained cordial. On behalf of the Society, my thanks to the Museum's Director/Chief Executive for allowing us the use of the Museum's facilities.

With regard to administrative matters, the Society recently printed new-look notepaper and membership leaflets. It is the Executive Committee's hope that this will enhance our image and also assist in recruiting new members.

On the whole, I believe that this has been a successful year for the Society. However, many challenges lie ahead, and we can not afford to be complacent. The Society must be flexible enough to adapt to changing conditions while retaining a sense of what makes us special, and remembering clearly what we are here to do. I believe there are several factors

to consider. First, we are essentially a scientific society. We can rightly feel proud of our contributions to the study and conservation of natural history over the past 83 years, and we must ensure that this strong tradition is maintained. Second, we are a participatory society. We do things together and share our experiences and knowledge with each other. This is an important part of our make-up and also needs to be emphasised and enhanced. Third, we are a society with a growing number of young members, many of them students. This represents a tremendous pool of talent for our future strength and growth. It is essential that we fully involve these younger members in our activities and make them feel truly part of the Society.

It is these issues, among others, that the new Executive Committee will need to address during the coming year. However, our success in meeting these challenges depends on you, the Society's members. Each of us can do something to assist, and to make sure the Society remains on a secure foundation during what is likely to be a period of increased financial stress. Recruiting a new member; making a donation, or securing one; assisting in the running of the office or the distribution of our publications; helping to organise a field outing: if each of us is willing to make a small commitment of this sort, the cumulative effect will be tremendous.

Ladies and gentlemen, let me conclude by offering thanks again to all those who have assisted me in running the Society's affairs during the last year: Dr Richard Bagine, who has chaired the Executive Committee in my absence; Prof. Steven Njuguna, our former Chairman, who has been a ready source of assistance and advice; Mrs Inge Ayres, Mr Brooks Childress, Dr Glyn Davies, Ms Lorna Depew, Mr Charles Dewhurst, Mr Onesmus Kahindi, Ms Maryanne Kamau, Prof. Len Newton, Ms Mairead O'Flynn, Mrs Judith Rudnai, Mr Rupert Watson and all the other members of the Executive Committee, elected or co-opted, who have always been a ready source of help. It is my hope that with the new Executive Committee that you will elect today we can continue to steer the Society onwards and upwards.

Thank you.

1991 FINANCIAL REPORT - B. CHILDRESS

Overall, 1991 was a good year for the Society financially, particularly when compared with the previous year. We ended 1991 with a surplus of Ksh 19,413, vs. a surplus of only Ksh 1,690 at the end of 1990. This increased surplus resulted from a year-to-year increase in total income of 27% (to Ksh 185,534), combined with an increase in expenditures of only 15% (to Ksh 166,121). However, while on the surface we appear to be doing well financially, beneath the surface there are two indications that we need to take decisive action to increase income and reduce expenses, if we are to continue as a viable organisation.

First, the entire increase in our 1991 income was attributable to a one-time increase in income from life subscriptions. In fact, without this increase in life subscription income, our total 1991 inoome would have declined by 6%. The major reasons for this decline in non-life subscription income were a substantial decline in the level of donations and a decline in our office sales, which was probably due to the fact that we haven't introduced any significant new resale products since the Society ties in 1989. Second, while we were able to hold the increase in our administrative expenditures to only 3% in 1991, the cost of producing our Journal and Bulletin increased by 50%, and there have been indications

of further significant increases this year. Since this cost represents almost 60% of our total annual expenditures, increases of this magnitude, coupled with a reduction in our annual sources of income, spells potential disaster unless strong action is taken.

Faced with this situation and not wanting to increase the basic subscription fees again this year, your Executive Committee, at its monthly meeting in March, made the following decisions to help increase income and reduce expenditures:

1. To recommend an increase in the life subscription fee from Ksh 2,000 to Ksh 5,000, effective with approval by the AGM. This was approved by the AGM in May.
2. To recommend two new subscription categories to encourage additional financial support this year, and in future years, from those subscribers who have the financial resources and are interested in helping the Society survive:
   a. **Fellow (Changed to "Sponsor" by the AGM)** - For an annual subscription fee of Ksh 500, Sponsors will not only significantly help the society financially, they also will have their names listed as special supporters inside the front cover of the Bulletin. (It has been agreed that for this first year, in view of the Society's need for funds, Sponsors will be asked to contribute Ksh 500 in addition to any annual subscription fee they may have already made.)
   b. **Supporting (changed to "Corporate" by the AGM) Member** - For an annual subscription fee of Ksh 5,000, each Corporate Member will also have its name listed as a special supporter inside the front cover of the Bulletin and will receive five subscriptions for its employees, although it will still have only one vote in matters requiring a vote of the members.

   These two new subscription categories were approved (with the name changes) by the AGM in May.
3. To establish a separate fund-raising committee to explore and initiate various fund-raising schemes, including a major capital funds drive, with the objective of putting the Society on a sound financial footing for the future. Any advice or assistance which members may have in this area would be greatly appreciated by Dr. Glyn Davies, the Chairman of this new committee.
4. To control production costs for the Bulletin by limiting each issue, except the annual AGM issue, to 16 pages and by having the printing done at non-commercial rates by AMREF. (As a result of these two actions, the March issue cost approximately 50% less than the December, 1991 issue.)
5. To control out-of-pocket costs for the Journal by sharing the production costs with the Museum for the new combined Journal format and by continuing to seek outside financial sponsorship as Charles Dewhurst has accomplished with Eden Wildlife Trust, who have agreed to contribute Ksh 6,000 per issue toward the production cost.
6. To solicit donations of a computer and printer for the office, not only to assist Lorna Depew with the Newsletter and Bulletin mailings, but also to help reduce the cost of Bulletin and Journal production further by enabling us to do the "typsetting" ourselves. (Please direct any suggestions along these lines to Dr. Edward vanden Berghe.)

Your Executive Committee believes these measures, combined with a large proportion of subscribers becoming "Sponsors" and helping to enlist "Corporate Members," will be sufficient to get us through this year without invading our deposit account and, to put the Society on a sound financial footing for the future.

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ELEPHANT SHREWS AND ARROW POISON

The *Acokanthera*-based poisons of East Africa are justifiably famous (for an overview see Verdcourt and Trump, 1969). Perhaps best known of all is the arrow poison prepared by the Giriama of Kilifi District in Kenya, using the bark and roots of *Acokanthera schimperi* (Walker, 1957). This poison, whose deadly effects were apparently first recorded (and indeed experienced) by the Portuguese in the sixteenth century, achieved more recent notoriety when it was discovered that it was being used by Waata hunter-gatherers to kill large numbers of elephants within the then newly-created Tsavo National Parks (Holman, 1967; Sheldrick, 1973; Parker, 1983).

The action of *A. schimperi* and other, optional, plant ingredients in the poison is reasonably well understood. *A. schimperi* itself provides a potent mixture of ouabain and other cardiac glycosides, sufficient to kill elephants and other large mammals with extreme rapidity if the poison is well made and the arrows on target (Watt and Breyer-Brandwijk, 1962; Parker, 1983). Cardiac glycosides are also present in the Desert Rose, *Adenium obesum,* whose wood and roots are sometimes added to the brew by Giriama and Waata producers (Champion, 1922; Parker, 1983). Addition of the irritant latex from *Aloe rabaiensis*, *Excoecaria madagascariensis* or *Euphorbia tenuispinosa,* increases the adhesiveness of the poison and accelerates its absorption into the victim's blood system (Walker, 1957; Verdcourt and Trump, 1969; Parker, 1983). The role of another recorded ingredient, the wood and bark of the tree *Platycelyphium voense*, is, however, not understood (Parker, 1983).

While the potency of Giriama arrow poison derives principally, perhaps even wholly, from plant materials, these are not its only ingredients. Different vertebrate animals, or parts of them, may also be added to the poison. These extra ingredients are reported to include the innards of Puff Adders, *Bitis arietans*, and the gall bladder and liver of a Nile Crocodile, *Crocodylus niloticus* (Holman, 1967). Giriama believe crocodile bile to be a deadly poison, and presumably have similar ideas about their livers as well as Puff Adders' innards. These ideas probably reflect the perceived danger posed by these animals rather than any effective toxicity, and the inclusion of these substances in the recipe for arrow poison might therefore be described under the heading of sympathetic magic.

The same description also applies to another animal ingredient: the whole body, live on some accounts, roasted on others, of an elephant shrew. In this case, however, the sympathetic magic is considerably more subtle, and as a result has been somewhat misrepresented in the literature. Moreover, there is some uncertainty about the identity of the animal involved. The rest of this article is devoted to an attempt to untangle some of this confusion.

According to Walker (1957) and Holman (1967) the animal in question is an elephant shrew, the species of which they do not identify. Champion (1922) describes it as a "rat" and identifies it by its Giriama name, *p'inji*. Like most non-zoologists, the Giriama and other Mijikenda speakers do not usually distinguish between small insectivores and small rodents, but tend to lump them together as different types of *p'anya* or rat. More than twenty Mijikenda names for these have been recorded (see, for example, the Giriama list in Taylor, 1891a). To make matters more complicated, the application of these names appears to differ somewhat between dialects. In Duruma, for example, the animal known as *p'inji* in Giriama is called *nyunga*. The Mijikenda classification of insectivores and rodents remains to be described and elucidated in full, and to date neither of these names has been given its proper zoological identification.

In Krapf and Rebmann's Raßai dictionary (1887) the *p'inji* is described as having a long snout, while in one of the Giriama folk-tales reproduced by Thoya (1980) describes how this came about. On this basis it seems reasonable to accept, as a working hypothesis, the identification of the *p'inji* as an elephant shrew, family Macroscelididae. It is also possible to hazard a guess at the species. Working in Gedi Forest, Costich (1977) has already matched two species with their Giriama names. These are *fugu*, the Giant (or Yellow, or Golden-rumped) Elephant Shrew, *Rhynchocynon cirnei*, subspecies *chrysopygus*, and *ts'anje*, the Four-toed (or Knob-bristled) Elephant Shrew, *Petrodromus tetradactylus*, subspecies *sultan*. By a process of elimination based upon the known distribution of other species, this leaves only two which *p'inji* might describe: the Rufus Elephant Shrew, *Elephantulus rufescens*, or the Short-snouted Elephant Shrew, *Elephantulus brachyrhynchus* (the classification and nomenclature adopted here follows Haltenorth and Diller, 1980). The Rufous Elephant Shrew, with its longer snout and association with dry bush country, including Tsavo, seems to be the most likely candidate. This assumes, of course, that the name *p'inji* is applied consistently to just one species.

Why, then, is an elephant shrew added to the arrow poison? Two closely related explanations are given in the literature. According to Walker (1957), the elephant shrew "when disturbed, makes its escape in a straight line, and its presence in the mixture is supposed to make the wounded game escape also in a straight line, making the search for the body more simple and safer - a nice example of sympathetic magic." The same explanation is given by Holman (1967): "The elephant shrew is an animal that follows a path. With the essence of such a creature in the poison, an elephant dying from it would also obligingly stick to a path, thus simplifying its pursuit." Such a pursuit may, of course, be necessary if the poison is not as potent as it should be or has not hit its mark properly (Watt and Breyer-Brandwijk, 1962).

The second explanation is not only the oldest one recorded (see Krapf and Rebmann, 1887; Champion, 1922), but also the only explanation I have ever heard from contemporary Giriama and other Mijikenda. It is believed that the *p'inji* (or *nyunga*) is unable to cross a path without dropping dead in the act. Likewise, an animal wounded with arrow poison containing the *p'inji* is expected to die if it attempts to cross a path, making its pursuit even easier than if it were simply to make off in straight line without such a limit to this travels. Given that the explanation related by Walker and Holman is probably from the same (Tsavo) source, it may be that it is no more than a garbled or rationalized version of the second, and certainly more widespread, explanation. This seems all the more likely given the parallel Kamba belief about a small animal called *Kailwa ni nzîa*, literally "the little one that is sent back by the road." According to Lindblom (1926), this "is a kind of mouse which is very often seen running along a path without crossing it. The natives believe that if this little rat crosses a road it will die." In the Kamba case, however, there is no record of this creature being an ingredient in arrow poison.

These beliefs fit in with what is known about the behaviour of elephant shrews, particularly the fact that they are usually diurnal (and therefore often seen) and tend to keep to regularly used pathways. This fact is not lost upon Mijikenda observers. According to an old Raßai proverb, when the *ts'anje* dies, its trails also die (Krapf and Rebmann, 1887). In his gloss upon this proverb, Taylor (1891b) supplies a fairly accurate description of the Four-toed Elephant Shrew, including the observation that "it has a sort of brush of short bristles under its tail, with which it produces a trail or path as it moves about in the jungle, and in doing which it makes a rustle." The Rufous Elephant Shrew,

tentatively identified with the Giriama *p'inji*, is also known to possess well-used runs (Rathbun, 1979). In addition to being seen running along these trails, it is possible that from time to time they are found dead upon them, giving further force to the beliefs described above.

It may be, of course, that the *p'inji* makes a more tangible contribution to the potency and efficacy of Giriama arrow poison, other than increasing the confidence of its users. As long as its proper identification remains uncertain, this will be difficult to ascertain. In general the work of matching vernacular names, like those of the Giriama, with their zoological equivalents is in a rudimentary stage. This is especially so in the case of small mammals like most rodents and insectivores, which remain relatively under-researched. Indigenous knowledge, beliefs and practices concerning these mammals may be of particular importance in providing clues to their distribution and behaviour, as well as in understanding its wider ecological context, a context which includes *Homo sapiens* both as a predator and as a major actor in changing the environment.

Acknowledgements

I am very grateful to Roger Blench in Cambridge, Eva Ndavu in Nairobi, and Yvette Vermeulen in Mombasa, for their help in locating and making copies of some of the more inaccessible sources which I have used in writing this article.

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SWALLOW-TAILED KITES AT NAKURU

Over sixty people turned out to count hundreds of thousands of birds on Lake Nakuru on 12 January 1992 as part of the worldwide counts of waterfowl organised by the International Waterfowl and Wetlands Research Bureau. Thanks to Cecilia Gichuki and Leon Bennun of the Kenya Wetlands Working Group and Mayoli Kisee, Warden of Nakuru National Park, for a most enjoyable weekend for a worthy cause.

Arriving at the Kenya Wildlife Service Hostel at midday on 11 January, the counters were greeted by a particularly beautiful sight. Four Swallow-tailed Kites, *Chelictinia riocourii*, were circling and swooping over the hostel. They looked like giant silvery swallows, with their pointed wings and long forked tails. Sometimes they hovered like Black-shouldered Kites. The Swallow-tailed Kites appeared again over the hostel on 12 January as the group prepared to leave.

According to Britton's *Birds of East Africa*, Swallow-tailed Kites nest during the long rains near Lake Turkana and in other semi-arid areas of northern Kenya and Uganda. In the non-breeding season they are regularly seen in the Rift Valley between Longonot and Suswa. No records for Nakuru are listed. Lewis and Pomeroy, in *A Bird Atlas of Kenya*, however, say that the Swallow-tailed Kites near Mount Suswa appear to be a small breeding population. Suswa is not so far from Nakuru "as the kite flies", and the Bird Atlas shows sight records for the Nakuru quarter square. Swallow-tailed Kites also migrate down to the dry country near the Kenya Coast during the non-breeding season, especially in dry years.

A Lilac-breasted Roller, *Coracias caudata*, perched near the KWS hostel also drew the bird-watchers' attention. It belonged to the Northern race of this species, the Lilac-throated Roller, *C.c. lorti*. The beautiful lilac colour was confined to the throat, with the rest of the breast blue. The last time that Swallow-tailed Kites and Lilac-throated Rollers were seen frequently south of their normal range was in early 1984, a year of severe drought. Farmers and economists, please take note of this avian indicator.

Fleur Ng'weno, P.O.Box 42271, Nairobi

OBSERVATIONS ON LIONS

On 26 January 1992 in Nairobi National Park a ranger at the Hippo Pools reported to me that a cheetah had made a kill about a week previously in the Athi Basin area. A male lion came up and cuffed the cheetah and killed it. The lion then took the carcass. This information is second hand as the ranger was told by a tour driver. Such an occurrence is not unusual as lions are antagonistic to all other predators. A cheetah cannot stand up to a lion so is always the loser in such encounters.

I would like to hear from any of our readers if they have witnessed this particular incident or any similar occurrence. I personally had seen on various occasions cheetahs abandon their kill on the approach of lions. I never witnessed an actual confrontation.

On the same day, at 6:00 PM I saw two lionesses and three cubs resting in the open in Nairobi National Park, along the Mokoyeti River between No.4 and No.5. Two Crested Cranes flew over them quite high, but then descended and circled the lions at a very much lower altitude, calling loudly for several minutes. I did not see any reaction from the lions as they were too far away. I had, in the past years occasionally witnessed similar incidents with Crested Cranes and Pied Crows mobbing lions. On one of these occasions a cub jumped up and tried to swat a low flying bird, but could not reach it. On another occasion a Pied Crow followed a walking lioness for quite a distance, circling very low over her head calling all the while. The lioness occasionally stopped and looked at the bird, then continued on her way. Have any of our readers seen similar incidents and if so what cat and what bird was involved, apart from housecats?

Judith Rudnai, P.O.Box 42220, Nairobi

COASTAL LEOPARD ORCHIDS IN DANGER

In recent months Leopard Orchids, *Ansellia africana*, and other orchid species have been on sale around the Westlands area of Nairobi - especially at week-ends. These orchids come from the coast. The Society heard a lecture by Beatrice Khayota last year, who under the auspices of and funding by the E.A. Wildlife Society, was investigating the orchid trade at the coast. The orchids were then being ripped from the forests to sell to hotels and by ferries to tourists and locals. Her work resulted in a ban at the coast on selling these orchids and had some effect in stopping the destruction. And destruction it is, as trees where the orchids grow on farms and in forests are cut down just to get at the orchids growing high in the trees. With the coastal ban, the orchids are now being sold elsewhere.

The sad thing is that, unless people have specialized knowledge and can re-create the natural conditions of where they grow, the orchids will die when transferred to cooler and drier climates - not to mention European conditions. Even with knowledge and special care the Leopard Orchids do not like to be moved. Please, therefore do not encourage the sellers by buying these orchids. They look marvellous, and buyers are assured that they will grow well in house and garden. Also please tell your friends of the danger to these spectacular indigenous plants.

The epiphitic *Ansellia africana* grows in large clumps particularly in Doum Palms, *Hyphaene campressa*, and large open forest trees at the coast and in *Acacia* sp. in the Kerio Valley. They have long sprays of yellow flowers about 3 to 4 cm across with brown spots (see figure). They favour moist lowland conditions. The Kerio Valley orchids have largely disappeared due to tree cutting. The Orchid Society is compiling a list of other endangered species of orchids, and the Law Reform Commission is looking into ways of protecting all endangered plants in Kenya. The latter would welcome any information on sale or destruction of indigenous plants. Information can be passed on to Mr J. Hamilton, P.O.Box 34999, Nairobi, or to the authors.

Mrs Ann Birnie, P.O.Box 30158, Nairobi
Mrs Lise Campbell,P.O.Box 14469, Nairobi

Flowering branch of *Ansellia africana.* Figure redrawn from A.D.Q. Agnew (1974), *Upland Kenya wild flowers* - OUP with permission from the author

BIRD SIGHTING - RED-NECKED PHALAROPE

Red-necked phalarope. *Phalaropus locates*

A single bird alighted on our swimming pool. Our house is situated at Casuarina Point, Malindi, about 400 metres inland from the sea-shore. This occurred on 26th February, 1992, in the morning. The bird was observed swimming around, and after a time emerged and sheltered under a shrub. It was observed that it had one foot missing. It returned to the pool at intervals. During the night it must have entered the pool again, as it was found dead in the out-let vent to the pool the next morning.

Two other local experts on coast birds also observed the bird, Mrs J. Goodhart and Mr L. Didham. They both confirmed that it was a Red-necked Phalarope without any doubt. The body of the bird is preserved for delivery to the Nairobi Museum in due course. Sighting of this species is infrequent at the coast, as they appear to fly off-shore, but this bird was impaired through its loss of a foot and must have sought refuge on-shore as a result.

Joan Grumbley, P.O.Box 420, Malindi

SOME LOCAL NAMES AND USES OF TREES AND SHRUBS IN THE UNIVERSITY FOREST RESERVE AT MAZUMBAI IN THE WEST USAMBARA MOUNTAINS, TANZANIA

The 450 ha University Forest Reserve at Mazumbai in the West Usambara Mountains, Tanzania (4°48'S 38°30'E), is one of the few areas of strictly protected endemic rich Eastern Arc forests. The vegetation is submontane and montane rainforest, with a small patch of heath on the summit of Sagara peak. The forest was originally part of a tea estate owned by John and Lucie Tanner, who donated it to the University of Dar es Salaam in 1967 for research and conservation. Mr Mgaa Sabuni, a resident of the adjacent Mgwashi village, was appointed as a forest guard: a post he holds to the present time. Over the years, Mr Sabuni has worked with the many researchers who have visited Mazumbai, and has an intimate knowledge of the forest.

The following list contains the Kisambaa names used by Mr Sabuni, with local uses known to him, of some of the trees and shrubs found in the forest. The list was originally prepared in 1981, Lucie Tanner very kindly translated the local uses and Dr John Hall, then at the Faculty of Forestry on the Morogoro campus of the University of Dar es Salaam (now Sokoine University) helped with identification of the plants.

I have updated some of the names from the original list. Subsequent users of the list with guides other than Mr Sabuni have commented that it is not accurate, and there is obviously considerable local variation in application of names to plants that are not commonly used.

Local name	Scientific name	Uses
Ale	*Encephalartos hildebrandtii*	The leaves can be woven into plates for separating seed from chaff.

Dwaiu	*Turrea hosltii*	The wood is used to make small spoons.
Cherooti	*Phillipia* sp.	The wood can be used for panga handles, and the knobs on the roots can be utilized to make pipes for smoking tobacco.
Kiabe	*Zanthoxylum* sp.	The wood is used to make arrows. The bark is boiled and the infusion taken against toothache.
Kiega	*Rauvolfia mannii*	A small piece of branch may be hung aroung the neck against swollen glands.
Kigwandi	*Dasylepis integra*	Used for clubs, in the manner of the Irish shillelagh. The name is derived from the word for a branch fork, as the tree branches a lot.
Kihambie	*Drypetes usambarensis*	No uses recorded.
Kisambo	*Mammea usambarensis*	No uses recorded. [1]
Koa	*Dalbergia lactea*	Used as a rope, and boiled and eaten to stop diarrhoea.
Kogo	*Polyscias fulva* and *Polyscias stuhlmannii*	The wood is used for making xylophones (pango).
Mamata	*Maytenus acuminata*	Used for axe handles and firewood.
Mandali	*Aguaria salicifolia.*	The leaves can be dried and made into a powder to improve digestion. However, care is needed because if a goat eats the leaves, it dies.
Mbakabaka	*Deinbollia* sp.	The tap root is excellent medicine for stomach problems. The pulped root is cooked inside a fat chicken, and the entire lot eaten.
Mbamba	*Bersama abyssinica*	Used for firewood.
Mbokoboko	*Entandrophragma excelsum*	A valuable timber tree which can be used for making doors and furniture.
Mbwangwe	*Lepidiotrichilia volkensii*	Used for firewood.
Mdananda	*Apholia theiformis*	Used for firewood; the leafy branches are used for torches to light one's way at night.
Mdomgonyezi	*Toddalia asiatica*	The roots are pulped, boiled, and taken for every internal pain. [2]
Mhafa	*Milletia oblata*	A very hard wood used for axe handles or pestles.
Mhande	*Craibia brevicaudata*	A hard wood used for axe handles and pestles.
Mkisigizi	*Peddiea fisheri* and *Dicranolepis usambarica*	A rope made from the bark is used for making baskets. However, it is toxic, as sucking on the rope causes pains in the throat.
Mkokoko	*Cleistanthus polystachyus*	Used for firewood and building. The fruits are edible.
Mkuka	*Ficalhoa laurifolia*	A good timber.

Mkulo	*Ocotea usambarensis*	The bark is smashed with red pepper, lemon peel, onions, salt and tomatoes, then pulped in a mortar and dried to a powder which is used to flavour beans. Also yields a good timber which darkens on exposure to light.
Mkumba	*Macaranga capensis*	The roots are boiled and the infusion taken against strong heart beat.
Mkunguma	*Sorindeia madagascariensis*	The fruits and roots are boiled and taken against cold and fevers.
Mkuti	*Aningeria adolfi-friedericii*	The buttresses can be used for making doors.
Mkuyu	*Ficus sur*	The fruits can be eaten in time of need. The roots are medicinal.
Mkwati	*Vepris stolzii*	The root is cut finely with lemon and used for an aphrodisiac. It is also used against worms. [3]
Mlombelombe	*Hallea rubrostipulata*	Used for timber and the roots are used as a medicine to stimulate a cow to give milk.
Mlungu	*Cola greenwayi*	The fruits may be eaten raw, and the wood used to make bows.
Mozaniko	*Ilex mitis*	Used to make small spoons.
Mozonozono	*Celtis africana*	The wood can be used to make knife sheaths.
Mpigamagasa	*Isoberlinia scheffleri*	Used for timber and firewood. [4]
Msambia	*Chrysophyllum gorungosanum*	Large wooden cooking spoons are made from the young tree.
Msambo	*Allanblackia stuhlmannii* and *Garcinia volkensii*	The *Allenbackia* leaves are used as a medicine for coughs, and the large fruits are a source of tallow.
Msangana	*Strombosia scheffleri*	Used for building.
Mse	*Podocarpus falcatus*	Good quality timber.
Mshai	*Albizia gummifera*	The wood can be used to make mortars and the roots boiled for medicine.
Mshiwhi	*Syzygium guineense*	Good timber for building bridges etc, but is not used for houses or furniture. The bark is boiled in water to give a cough medicine.
Mshunduzi	*Croton sylvaticus*	Used to make axe handles. The bark and roots are eaten as a medicine against fever.
Mtambakuzimu	*Deinbollia* sp.	See Mbakabaka.
Mtambwe	*Ensete edule*	The leaves can be made into rope, or used entire for umbrellas or roofing. The seeds can be pulped and eaten in time of need.
Mtei	*Maesa lanceolata*	Used to make small spoons. The roots are used as medicine.
Mtiwapaa	*Dovyalis abyssinica*	Used for firewood. [5]
Mtunte	*Xymalos monospora*	Used to make small spoons.

Mula	*Parinari excelsa*	The bark and roots are boiled for muscle ache after hard work. The fruits are eaten raw.
Mweti misitu	*Rananea melanophloeos*	Used for building poles.
Nekazito	*Cassipourea malosana*	Young trees are used for hut-building poles. [6]
Ngoko	*Piper capense*	An excellent medicine. The roots are boiled and the infusion taken against worms. The inflorescence can be eaten against mshango (a bad but not dangerous spirit).
Nkuyu	*Pauridiantha paucinervis*	The wood can be used to make pipes for smoking tobacco.
Nyasa	*Newtonia buchmananii*	The timber is used for building and the bark eaten raw against coughs.
Papata	*Dracaena steudnerii*	No uses recorded.

Notes with the table:

1 The Wasambaa regard this tree to be the male of Msambo (*Allanblackia stuhlmannii*) as it has much smaller fruit. In addition to fruit size, the two trees can be distinguished by taste. Msambo leaves taste almost sweet, whereas Kisambo leaves taste dry and unpleasant. I have eaten both leaves with no ill effects.

2 Branches and leaves of this plant are also used medicinally, and I have seen them being carried by the Wasambaa in their hair, which is very sensible as it has wicked incurved prickles.

3 On a later visit to Shume in the West Usambara I mentioned the former use of this plant to our local guide who took some roots. The following day he said that the elders in the area agreed with this use and confirmed that it was effective. I have not yet tried it.

4 The name is derived from clapping hands (mpiga magao), due to the noise made by the ripe large wooden pods when they burst in the sun.

5 The name means tree of the antelope, which refers to the large thorns on the trunk and branches.

6 The -zito in the name refers to the heavy weight of the wood.

Acknowledgements

I am grateful to Mgaa Sabuni, Mr. & Mrs. J. Tanner and Dr. J.B. Hall for their help in preparing this list. The Tanzania Commission for Science and Technology kindly gave permission to conduct research in Tanzania. Funding for the field work was provided by the Royal Society.

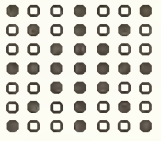
Jon C. Lovatt. Department of Botany, P.O.Box 35060, University of Dar es Salaam, Dar es Salaam, Tanzania.

LAKE NAKURU NATIONAL PARK: WATERFOWL COUNT, 12 JANUARY, 1992

At about 1030h during the waterfowl count on the section from the Baboon Cliffs turn-off southwards, a Greater Cormorant (*Phalacrocorax carbo*) was seen to regurgitate some fish on the shore. Closer investigation revealed 32 small fish varying in size between 10 and 20 cm, the majority about 10 cm in length. They were subsequently identified as *Oreochromis alcalica (Tilapia alcalica grahami* Boulanger). Among the fish were a number of thin pink Nematode-like worms about 7 cm long. Dr G.R.C. van Someren informed me that they were *Contracaecum* sp., a worm commonly found in the gular region of herons and cormorants. The cormorant did not seem to the observer to be suffering adversely from the worm burden.

The life cycle of *Contracaecum* is complex. The young stages are to be found in aquatic organisms such as *Cyclops*. Once eaten by the fish, they encyst in the pericardium around the heart. There they remain until they are eaten by a bird such as a heron or in this case, cormorant. As they encyst in the pericardium, they tend to cause a physical distortion of the young fish, such that they are readily caught - or die off. Although adult fish often support large numbers of cysts, there is as yet no evidence to show that there is a pathological effect. This parasite was the subject of a PhD study in Kenya some years ago. (Ian Parker, personal communication).

C.F. Dewhurst, P.O.Box 30023, Nairobi



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THE PARKS OF WESTERN UGANDA

Contrary to assertions, western Uganda is a safe and worthwhile region to visit. Most of the roads are good or even excellent. Petrol is not scarce although in remoter places the pumps have not been repaired. Food is plentiful and there is no shortage of any basic item in the shops. The road blocks manned by soldiers or policemen are a nuisance, yet it is conceivable that they provide for the security which prevails in the area. Above all the people retained their attitudes of kindness and friendliness and one feels welcome everywhere.

Ours was a 4000 km car journey. We wanted to see for ourselves whether there is any game, any birds or trees left for the naturalist to study and enjoy and whether there is an infrastructure which could be trusted when planning future safaris. We had to find out for ourselves because reliable information about Uganda is not available in Nairobi and indeed many of our friends were apprehensive about our endeavour. Fortunately for western Uganda (and for us), they were wrong.

Murchison Falls National Park

The track from Masindi to Paraa is poor and not signposted. Entrance fees can be paid in dollars or in Uganda currency. Paraa is completely destroyed as is Pakuba Lodge, where monitor lizards have populated the swimming pool and baboons reside in the ruins. The present park headquarters on the south bank of the Nile is a ramshackle village and a disgrace, but even so there are some reasonable bandas where one is looked after by friendly staff.

The splendour of the Falls has not been diminished by political history and the launch trip on the Nile is as it was 30 years ago. Crocodile and hippo abound and we saw a breeding herd of elephants on the north bank. There were large flocks of African Skimmers and the Red-throated Bee-eaters were nesting. The game drives, more so in the northern section of the park, were disappointing particularly to one who 25 years ago witnessed the elephant culling there - transacted in the light of the same arguments one hears today in Zimbabwe.

Apart from the Nile and the Falls, the gems of Murchison Park are the new cottages at Rabongo. Situated some 25 km south of the Falls among forested hills on the bank of a stream, this camp deserves the naturalist's attention for its birds, chimpanzees, forest animals, trees and other plants. There is a resident biologist and walks through the forest as well as drives to the Falls are very worthwhile.

Rabongo has its own airstrip. The camp is managed on behalf of the National Parks by Hot Ice Limited (P.O. Box 151, Kampala Tel. and Fax 242733); full board as well as self catering arrangements are available and one should think that until such time that the management plan for the Park is agreed upon and implementation progresses to a stage when a new camp is built at Paraa, Rabongo remains the only option for the traveller.

Kibale Forest

This medium altitude semideciduous forest lies some 25 km south of Fort Portal. It is gazetted as a "Forest Park", a new entity in the sense that it is a Forest Department and not a National Park venture. Its existence is proof of the Uganda Government's sincerity in an effort to conserve and to husband its national resources. The forest is home to 11 species of primate, among them chimpanzees, mangabey, various cercopithecids and the Potto. Three hundred species of birds have been recorded and many of them are

essentially of west African connections. Apparently there are White-crested Hornbills, which according to Britton would only occur on the Bwanba side of the Ruwenzoris. The Kibale Forest is also a refuge for an unspecified number of elephants. Kanyanchu Camp is 35 km south of Fort Portal. Visitors must bring their own tents, bedding and food. Water, cooking utensils, showers and toilets are available. (Write to: "Bookings", P.O.Box 700, Fort Portal, Uganda.) There are numerous nature trails and guides knowledgeable in all aspects of the forest accompany the walkers. We were impressed by the sense of enthusiasm and dedication prevailing in the camp and would like to applaud the joint effort between the Forest Department, Makarere University and the various NGO's.

The Ruwenzori National Park

Climbing in the Ruwenzori Range is now better organised than at any time in the past because, with the establishment of the National Park, the entire infrastructure has been rebuilt and reorganised. The arrangements for the booking of huts and camps, as well as those pertaining to guides and porters have been all centralised. One does not have to bicker with multitudes of Bakonjo in mustering porters, moreover the fee structure is transparent and one pays the Park and not individuals.

We did not climb the mountain, but we made enquiries and talked to people who have been on the mountain recently. (Bookings either through Uganda National Parks, P.O.Box 3530, Kampala - or The Warden, Ruwenzori National Park, P.O.Box Kasese - or, if you wish to climb in maximum comfort and with minimum input on preparation: Hot Ice Lts., P.O.Box 151, Kampala.)

Queen Elizabeth National Park

The management plan for this Park, prepared by Dr Robert Olivier of the Uganda Institute of Ecology is undoubtedly the most circumspect document of the kind that I have seen. It is a document which takes into account nature as well as culture, with other words, it recognized that conservation is a cultural activity and that the expectations and aspirations of people have to be accommodated. Implementation of the plan is in progress - although of course the easier issues have been tackled first: The roads have been rehabilitated (if anything they are too good!); there are serviceable vehicles about and the radio network is excellent. One will have to see whether implementation of more difficult matters such as control of fishing, the resettlement of Kazinga Village and the imposition of discipline in the sprawling slum on Mweya Peninsula itself will succeed.

Mweya

The habitat change secondary to the reduction in elephant and hippo numbers is obvious but equally obvious is the large increase in the numbers of Uganda Kob (ca 50% more than ever recorded) and bushbuck. The most interesting change is the presence of Giant Forest Hog on the plains where this newcomer (from where? and why?) has adopted diurnal habits at least in the sense that it does not hide at daytime. Hippo numbers are recovering, lions are again more regularly seen but there is evidence for large increase in the numbers of leopard.

The launch trip on the Kazinga Channel is as it ever was with the addition that nowadays the coxwain keeps lookout for crocodiles as well, for this saurian has, for the first time in recorded history, negotiated (or rather, circumvented) the Semliki Falls and has invaded Lake Edward.

Mweya Lodge has been largely refurbished. On the evening of our stay there, the lodge was full. Half of the guests were from Brussels: an EEC delegation (10 of the 12 members represented) came to see how their aid money is spent. I kept wondering what the cost of the visitation may have been and how this sum compares with the amount of subsidy?

Ishasha

Save for the diminished number of Topi, Ishasha has not changed and lions still indulge in their inexplicable habit of resting in the fig trees. There was great excitement: A poacher had been caught, in 4 years the first poacher who was after elephants. Alas, before he could be interrogated by the park authorities, he was executed by the army - as everyone who is found with an illegal gun is - and now the anxious notion that the possible change in the CITES arrangements is already anticipated by the illegal ivory trade, is further enhanced.

There are bandas at Ishasha and there are camping places and again Hot Ice provides luxury arrangements for those who wish to camp in maximum comfort.

The Impenetrable Forest

Gazetted now as a national park, the Impenetrable Forest is in the process of being developed for exclusive tourism. A headquarters is being built at Bahuma and there will be banda style accommodation. A private caterer is in the process of establishing an eating place and provision store nearby.

The star attraction of the Impenetrable Forest is the Mountain Gorilla. There appear to be some 300 of these gentle giants, if so that is nearly again as many as there are in the Virungas. Makerere biologists work together with the National Park staff to habituate some of the gorilla groups and we were told that later in the year the Park will arrange for gorilla safaris.

The Impenetrable Forest is home also to chimpanzees and it is probably the only area where these two hominids cohabit in large numbers. Forest animals and birds abound and we have seen the Black Bee-eater and the Yellowbill. There were many splendid butterflies about and I much regretted my ignorance in lepidoptery! We drove across the forest through Ruhija to see Tom Butinski, who undoubtedly is the saviour of this outstanding area (although even he is helpless *vis a vis* encroachment legalised by presidential populism of a past regime) but we did not find Tom and therefore I could not learn the trade secrets of an individual who accomplished the feat of putting a forest into the center of the nation's conscience.

Lake Mburo National Park

This little park situated south of the Masaka-Mbarara road is the only place in western Uganda where there are zebra and eland. It is also an area where one can study the effects of conservation turned off and on: the political expediency of one president who lets people into the park followed by the insensitivity of the next who chases them out by gunpoint only to leave the mess to the third one who now tries to persuade people to remove some 20,000 cattle from the little park. Still, walking safaris around Lake Mburo are most rewarding: the game is quite tame, including, to my chagrin, the buffalo. There are Topi and Bohor's Reedbuck, Impala and Oribi, Waterbuck, hippo and there are many interesting birds of the type one associates with northwestern Tanzania. We saw a

splendid Levaillant's Cuckoo and also large numbers of palearctic waders, particularly ruffs.

There are half a dozen comfortable bandas a Rwonyo, the headquarters of the Park, (those who mind bats ought to take tents,) and an airstrip is under construction. (Booking through Uganda National Parks, P.O.Box 3530, Kampala).

Conclusions

Naturalists and safari enthusiasts resident in Kenya have been influenced - methinks - by the local genius which insinuates that we are so much better than our neighbours... Uganda is reconstructing and environmental considerations are obviously an important part of Government policy. Great efforts are being made to save forests and to rehabilitate old and to create new national parks. The wardens we have met, particularly at Mweya, Ishasha and Rwonyo are excellent men, not only dedicated and disciplined but also well educated. The contribution of Makerere University to the development of these parks is impressive particularly because it is not limited to biologists but it involves community developers and economists and it involves women graduates too. The reputation of Uganda as an insecure and hopelessly devastated place does keep international tourists away. I thought, perhaps members of the East African Natural History Society could show the way in rediscovering the multifarious attractions of western Uganda.

Mr I.J.P. Loefler, P.O. Box 47964, Nairobi.

REQUEST FOR INFORMATION

Recent studies in Zimbabwe by NRI scientists have shown the importance of the African Fish Eagle as an indicator for the health of lake habitats. I have been asked for Fish Eagle feathers for pesticide residue analysis. Any Fish Eagle feathers will be gratefully received; please provide date and locality data.

Which trees rain? The nymphs of the cercopid bug *Pytelus glossus* produces such large quantities of liquid waste that it appears to "rain". I have records from *Croton macrostachys*, *Schrebera alata*, *Grevillea robusta* and *Ficus sycamorous*, but I would be very interested to have information as to what other trees are subject to this phenomenon.

C.F. Dewhurst, P.O. Box 30023, Nairobi.

NOTE FROM THE EDITOR

Daphne Backhurst: obituary notice in Bulletin of December 1991. Graeme Backhurst's name should not have appeared under the obituary for Daphne. He had supplied the information for inclusion in the accompanying appreciation and it was not intended as a full obituary.

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Ms D. Curtis
Mr C.F. Dewhurst
Mr and Ms Grumbley
Mr A.R. Gregory
Mrs N. Heyer
Mrs D. Holmes
Mr J. Karmali
Mrs S. Knocker
Mr J.H.E. Leakey
Mr E.B. Martin
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Dr E. Vanden Berghe

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DOGS AND THE SIRIKWA AT HYRAX HILL

By definition, a dog is a domesticated canine mammal, *Canis familiaris,* that occurs in many breeds which show a great variety in size and form (Hanks, 1989). Today, there are more than 400 breeds of the dog, many of them not necessarily displaying resemblance in outward appearance. This is despite the fact that the anatomy, physiology, general morphology of the bones, dentition, shape of the brain and the gut are remarkably similar when not considering proportions. Generally, all known dog breeds owe their existence to artificial selection by man since the time of domestication from various wild canids that were tamed by human hunters some 12000 years ago. This date was obtained from the, so far, earliest known record of domestic dog remains from the late Palaeolithic Cave of Palegawra in Iraq (Turnbull and Reed, 1974). Dog remains, however, are common only during the Neolithic Period, a time when other domesticates are well represented in the archaeological record. Some of the earliest remains for the pets have mainly been found at archaeological sites in Western Asia, while a few cases have been reported from North and South America, North-West Europe, Russia and Japan. This indicates that taming of the animal occurred in many parts of the world where both man and the ancestral wolves, foxes, coyotes, dholes and African wild dogs shared ecological zones.

With evolution and adaptation, the domestic dog of today has developed traits that are characteristically well pronounced in comparison with its wild relatives. The propensity to bark is, for instance, never well developed in the wild canids although they can be heard to bark occasionally and perhaps learn to vocalize when in captivity (Clutton-Brock, 1987). The deep and sometimes continuous barking of the domestic dog and the yapping of the puppies may in this case, therefore, be regarded as a product of domestication. Though it is presently unclear how the dog domestication process may have happened, it is nevertheless possible that the kinship and powers of communication that exist between human beings and dogs today may have developed as an integral part of the hunting ancestry of both ourselves and the dog family (Clutton-Brock, 1987). Such a link would have possibly been based on the similar social structures and behaviour patterns that evolved over time in both species in response to the needs of a hunting team. Surprisingly, remains of the domestic dog have not been forthcoming from archaeological sites in Africa, with a few exceptions in the Central and Southern Africa, and only during the Iron Age (Voight, 1983). This reality seems to be getting confirmation from East African sites since 1988 when Dr Andrew Reid found a semi-complete skeleton of a domestic dog at the Ugandan site of Ntusi (Reid, pers. comm.). Then in 1990, the author found complete skeletons of both adult and neonate (or stillborn) dogs while excavating at the Iron Age Sirikwa sites at Hyrax Hill in Nakuru, Kenya.

Sirikwa Sites

Sirikwa sites are characterised by occurrence of saucer-shaped hollows, and mounds on the landscape, sometimes in association with remains of structural features such as hut post holes, foundations and collapsed roofs. The sites occur almost always on the gradual slopes of hill sides and in groups of about five, although concentrations of a hundred and even more have been reported (Sutton, 1973). Sirikwa sites are known especially from the Central Rift Valley of Kenya, the Western Highlands and the Cherangani and Mt Elgon area. Excavations into several of the hollows indicate that they represent the remains of livestock kraals and stockaded settlements, while the mounds are artificial creations that consist of general house refuse garbage, ash and dung. Sirikwa culture sites are also

characterised by the occurrence of poorly worked obsidian tools, a pottery tradition (Lanet Ware) and often indirect evidence for usage of metal tools. Sirikwa culture is known by the evidence of radiocarbon dating to have been fully developed by shortly after 1000 AD, with possibilities of indigenous evolution from one of several of the pastoral Neolithic cultures of the Central Rift Valley of Kenya.

In addition to the Hyrax Hill sites, excavations have been done at the sites of Lanet (Posnansky, 1967), Kabyoyǫn (Chapman, 1966), Tambach (Nobble,1964), Deloraine Farm and Chemagel, Muringa and Namgoi (Sutton, 1987a, b, 1973), while surveys, mapping and surface collections have been undertaken at the sites of Kaptagat (Odak, 1974). Evidence from these sites suggest that the people of Sirikwa culture were basically pastoralists specialising on the management of cattle, sheep and goats for subsistence. It is possible that they (Sirikwa) supplemented the pastoral food resources by limited hunting or scavenging of both large and small wild animals, and the exploitation of forest based foods, such as wild vegetables, fruits, nuts and wild honey. Evidence for agricultural activities is so far inconclusive. Though metal tool remains and smelting equipment is rare, indirect evidence of metal usage has been found in the form of cutmarks on bone remains. Habitation huts were built adjacent to the livestock kraals while the whole settlement complex was encircled by a fence.

Sirikwa culture is believed to have come to an end sometime in the 18th or 19th century AD, possibly as a result of external interference from the raiding and warring communities such as the Maasai and the Karamajong'.

Hyrax Hill

Hyrax Hill is a gazetted National Monument located within Nakuru Municipality and only 4km from the town centre on the Nakuru-Nairobi highway. The hill has excavated sites of both Neolithic and Iron Age Sirikwa culture, and a site museum that exhibits material from Hyrax Hill itself and other sites in the Central Rift Valley. *Bao* game boards of unknown antiquity are also found scattered in different parts of the hill's slopes. Pioneer work in the hill was undertaken by Dr Mary Leakey between 1937 and 1938, followed by R.J. Clarke who was commissioned by the Kenya National Museums in 1965 to open sites on the monument for public exhibition. Other excavations were undertaken between 1973 and 1974 by Dr J.C. Onyango-Abuje, between 1985 and 1986 by Dr J.E.G. Sutton and in 1990 by the author.

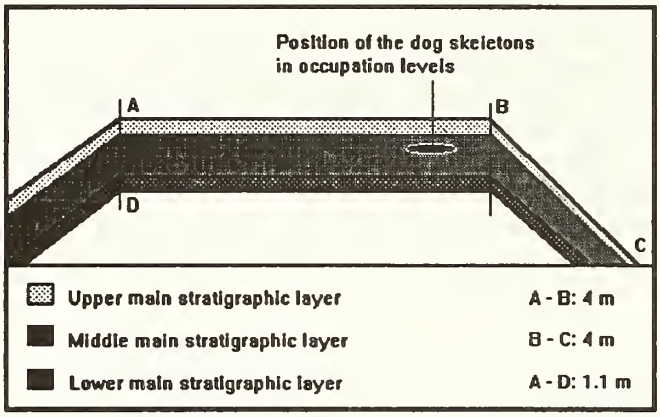
The mound excavated in 1990 acquired the identifying letter K, following a system of labelling excavated sites at Hyrax Hill started by Leakey (1945). Site K is located some 80 metres to the north of the Hyrax Hill site museum building, and together with the adjacent and associated hollow (L), covers a total area of 1569 square metres. The excavation recovered material that includes both domestic and wild animal bones, Lanet Ware pottery, stone vessel fragments, stone tools, plant pollen remains and structural features that are comprised of hut foundations, walls and collapsed roofs. Excavation, stratigraphy, examination and analysis of the material is reported elsewhere in depth by Kyule (1991a, b, c). Progress on the study of recovered dog remains is reported in this article.

Dogs at Hyrax Hill

As indicated earlier, the July - October 1990 excavations at Hyrax Hill recovered the complete skeleton of an adult dog (except for the right fibula and the right calcaneum), and a total of five neonates or stillborns. All six were found together, while an additional dog

individual is represented in the site's bone collection by a lumbar vertebra that was found from a different part of the site.

The complete skeletons were found at a depth of 50cm below the ground surface, at a section of the site (4 square metres) with human occupation levels between 30 and 100cm below surface (see figure below). Above, together and below the skeletons were some 117 stone implements, seven stone vessel fragments, 26 pot shards, seven pieces of hearthstones, 261 pieces of domestic and wild animal bones and 67g of charcoal. The adult skeleton lay on its right side, facing North in an extended position, with head bent towards East and slightly buried deeper than the rest of the skeleton at 56cm below the surface. The surrounding context was mainly ash and human material of dark olive brown colour (3/3) and light grey (8/2).



Excavation stratigraphy showing location of dog skeletons at mound K, Hyrax Hill

Osteological examination of the skeletons by Mrs Nina Mudida of the Kenya National Museums, Nairobi, and later by the author, revealed that the adult individual was female and aged between 18 and 24 months. The presence of the five neonates/stillborns indicate that she was pregnant and died either on site during or immediately after giving birth, or while still pregnant. In either case, she most likely was disposed of together with other garbage, and with time, succeeding refuse disposals on the mound buried the dead animals.

Bone weathering state of the skeletons is generally uniform when compared with the rest of the site's bone collections. Unlike the other bones, however, the dog skeletons show only slight post-depositional breakage and no evidence for pre-depositional breakage of human nature or otherwise. Stratigraphy of the site, Mound K, the context of the skeletons within human activity levels and the presence of *in situ* cultural material suggest that the dogs are not intrusions, and their presence would therefore be as old as the site occupation itself.

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VIOLET-CRESTED TURACO IN KAREN

21 January, 1992. Another lovely sunny day, temperatures in the 70's with a cool breeze rustling the tops of the podo trees outside the kitchen window. The garden is at the edge of the Ololua Forest in Karen, Nairobi, with wonderful views of the Ngong Hills and at about 6,000 feet above sea-level. These podo trees are favourite haunt of the Hartlaub's Turaco (*Tauraco hartlaubi*) especially at the moment as the fig tree next to them is ripe and a hive of activity with birds flitting in and out. The Turacos sit in the shady podo, their dark shapes moving in and out of the fig from time to time for a few juicy fruit.

Suddenly there is even more of a commotion in the podos as the Turacos leap about calling harshly, from one branch to another their green bodies and red wings flashing as they fly making quite a sight. Mixed up in all this I hear a curious rolling call and a "kok, kok, kok" like a Turaco but not their usual call. I rush outside, grabbing my binoculars as I go, and peer into the trees. Violet-crested Turacos (*Tauraco porphyreolophus*)!!! A pair as far as I can make out and the Hartlaub's seem excited or don't like their company. As this is a rare occurrence in Nairobi I get in the car and dash down the road to get Dave Richards to confirm the sighting. Fortunately he is just home from safari and when we get back we have wonderful views of them. They seem slightly bigger than the Hartlaub's, have a rounded violet crest, glowing red eyes and no white markings on the face so can be picked out quite easily once one "gets ones eye in".

Later I look in my diary and find that it was the 3rd week in January last year that I saw them before. Also a pair so far as I could tell (the same?) but that time in a different fruiting fig, nearer the forest in one of the bomas. I haven't seen them since - most days - but of course they don't put in an appearance for the Wednesday morning bird walk!

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NOTES ON *ALOE CHRYSOSTACHYS*

When climbing Kijegge Hill, on a Mountain Club of Kenya weekend meet in 1989, I collected a living specimen from a population of aloes growing on some rocks at an altitude of about 1150 metres. The plants were not in flower, but my specimen did eventually flower in my garden in 1992 (*Newton 3516*, EA, K). Then I was able to identify it positively, and found that it is *Aloe chrysostachys*. This species was described in 1976, and the specific epithet means "golden spike", referring to the inflorescences of golden yellow flowers (Lavranos and Newton, 1976). The plants consist of large stemless rosettes that sucker to form clumps up to a few metres across. In the natural habitat the plants grow in very shallow soil on rock exposures, and in this situation the leaves develop an attractive purplish colour.

The type locality of *Aloe chrysostachys* is Ngomeni Hill, where plants had been collected by the late George Classen, a water engineer who travelled widely on duty and collected many interesting and new plant species during his travels. Kijegge Hill is 65 km north-west of Ngomeni Hill, both in Eastern Province (in Embu District and Kitui District, respectively). Classen reported seeing the same species on Kuuso, Waita, and Gai (all three in Kitui District), though only the Gai population is represented in herbaria by a recent collection (*Newton 4061*, EA, K). All these localities are isolated hills of gneissic rock, in the plains to the South and East of Mount Kenya, in the *F.T.E.A.* region K4. Classen also reported that someone else had seen this species in the Meru National Park.

Although I am co-author of the name *Aloe chrysostachys*, at the time of the publication I had not visited Ngomeni Hill. The plant from which the type specimen was prepared had been collected by Classen, and the description was prepared from flowers that appeared in cultivation. Only recently did I visit Ngomeni Hill to see the species in its type locality. One reason for wanting to visit the locality was that Classen had reported a red-flowering aloe growing together with *A. chrysostachys*. He said he did not know if the red-flowered plant was a different species.

I went to Ngomeni Hill when the Kijegge Hill specimen was flowering in my garden, in the hope that this would also be the flowering season in the natural habitat. This hope was realised, and I found numerous flowering plants in the large population that is flourishing on Ngomeni Hill. Of the plants in flower, about two thirds had yellow flowers, and one third had red flowers. In all other characters the plants were identical, and I was left in no doubt that they represent colour variants of the same species. The existence of red and yellow flower colour variants in one species population is known in some other aloes, *e.g. A. confusa*, the pendulous species that occurs around the edge of the Lake Chala Crater (Reynolds, 1966). In all such cases plants with yellow flowers outnumber those with red flowers.

As the type specimen of *Aloe Chrysostachys* has yellow flowers, and this colour was given in the original description, details of red flowers in this species have not been reported. On the red-flowered plants (*Newton 4040a*, EA, K), the flower buds are crimson with brownish tips. The perianth tube of open flowers is crimson, and the sepal lobes are crimson with narrow cream margins and three brownish nerves along the midline. In size and shape the red flowers are identical with the yellow flowers on other plants in the same population (*Newton 4040I*, EA, K).

Fruits and seeds were not available when the original description was drawn up. The ripe fruits are 15-19mm long. Seeds are light brown, with a brownish membranous wing

5-6mm long x 3mm wide. Two other characters that were not mentioned in the original description can now be recorded. It has been found that the texture of the leaf surface (rough or smooth) and the colour of the leaf exudate (the juice that exudes when the leaf is cut or broken across) are of diagnostic importance in this genus. In *A. chrysostachys* the leaf surface is smooth, and the exudate is yellow when fresh, changing to brown as it dries.

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KISERE FOREST: A LAND OF RARE SPECIES

On a topographical map Kisere Forest Reserve looks like a small island in a sea of human settlements. Located about 2km from the northern boundary of the Kakamega National Reserve, it serves as a strong reminder that the Kakamega forest in Western Kenya was once continuous and expansive. With a rapid increase in human population and hence demand for living space, the natural forest has disappeared under human onslaught. At present, however, what remains has been declared a part of the gazetted Kakamega National Reserve.

It is intoxicating to visit or work in the Kisere Forest. In these 484 hectares of forest live numerous species of plants and animals. Most of them have not been studied and some have not even been listed. This is worrisome because they may go extinct locally or regionally without note.

A good example of this dearth of accounts of the biology of species living in the Kisere Forest is the beautiful but threatened de Brazza Monkey *Cercopithecus neglectus*. This primate species was thought not to occur in the Kakamega Forest. An overall national census in 1983 by Jean Brennan of the Institute for Primate Research of the National Museums of Kenya found only 150 de Brazza Monkeys. At that time it was only in the Saiwa Swamp where 28 de Brazza Monkeys are protected. The rest of the monkeys were found on private land. Since no censuses have been done as follow up, it is not known whether these groups still exist.

With at least 43 individuals, Kisere Forest Reserve has got the single largest group of actively breeding de Brazza Monkeys. This is based on a study done in 1989. Since they like to live near rivers, it is very likely that there are more groups in the Kakamega Forest Reserve because of its rich network of streams. In addition to this intriguing primate, Kisere Forest is also home for the Blue Monkey, *Cercopithecus mitis*, Redtail Monkeys, *Cercopithecus ascanius*, Black-and-white Colobus Monkeys, *Colobus guereza* and the noisy Olive Baboon *Papio anubis*.

Visitors to the forest can see the *Cercopithecus* monkeys by walking quietly through the forest with their eyes searching the canopies above. The baboons are conspicuous; they are ever quarreling among themselves and they frequently move out of the Reserve to raid

sugarcane and maize farms. Occasionally, they snatch unwary chickens from homesteads. It is advisable not to stand directly under Black-and-white Colobus Monkeys because they are notorious for urinating over one's head.

Other not so conspicuous mammals include the African Civet, Genet, and Duiker to name a few. Kisere forest is, of course, a paradise for bird lovers. The Great Turacos virtually jump in front of your path. There are numerous snakes, some of which are poisonous but who prefer to keep out of the way unless they have to react in self defense.

The most numerous biota are plants. Included are such important species as *Olea welwitschii, Prunus africana, Cordia abyssinica,* etc. During this survey, *Entadrophragma guineense,* once thought to be extinct in the Kakamega forest, was found in a few stands in the Kisere forest. It is quite clear that Kisere Forest Reserve will continue to reveal more surprises in the future as more and more biological surveys are done. Because of the location and size of the Kisere Forest and proximity to the main Kakamega forest, it is an ideal place to do scientific studies. I hope that natural historians and lovers of nature will go for it, especially in this age of heightened global environmental concern.

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THE ECOLOGY OF THE LARGE HERBIVORE COMMUNITY IN LAKE NAKURU NATIONAL PARK

Lake Nakuru National Park was totally surrounded with both chain link and an electric fence in 1987 making it an ecological island. However, activities leading to its complete isolation started earlier this century when man began utilising the catchment for urban development, commercial farming and livestock rearing. The result was an irreversible trend towards loss of migration opportunities for large game, low predation pressure and increased herbivore density. Consequently, there have been large scale changes in the structure and distribution of vegetation types in the region. Having been so modified by man, the Park is now in dire need of active management which requires that accurate information be readily available on all aspects of its ecology.

To achieve this goal, I began a long term study in October 1990, aimed at understanding the structure of large herbivore populations, and their interactions with grazing resources.

I have so far gathered comprehensive data on the population structures, spatial and seasonal distribution patterns of the Park's large herbivore species. I have also been monitoring the seasonal availability and quality of food resources in different parts of the Park. In order to enable me fully to understand past changes taking place in the area I wish to request members who may be in possession of any interesting information on record to kindly get in touch with me through the address below. In particular, I will gratefully appreciate photographs of any type or quality. I undertake to return every record to its rightful owners after studying them, and personally acknowledge all sources and credit them in any publication.

Evans M. Mwangi, PhD student, Department of Zoology, University of Nairobi, P.O. Box 30197, Nairobi

ASHY STARLING'S EGGS DESCRIBED

Finding that Brown and Britton (1980) for the Ashy Starling *Cosmopsarus unicolor* listed two nest records, one in February and the other in March, but gave no other details, and Walters (1980) indicated that this species' eggs were undescribed, having at Chester Zoo England, achieved what may be the first captive breeding of this East African endemic, which occurs through interior Tanzania, with an old record for Lake Jipe, south-eastern Kenya, Wilkinson & McLeod (1991) have published the following description:

"The eggs were sub-elliptical, smooth and slightly glossy and at the first glance appeared to be of a uniform pale blue colour." Noting that the closely related Golden-breasted Starling's (*C. regius*) eggs are described as pale greenish blue minutely speckled with reddish brown, they continued: "Closer inspection of one of the Ashy Starling eggs revealed some slight staining and several obscure pale reddish brown blotches on the narrow end. Less obviously the pale greenish blue colour also appeared to be marked with uniform minute faint brownish speckles which were so tiny that they could easily have been overlooked."

The incubation period was thought to be about 14 days. From two three-egg clutches, two youngsters were raised from each. For the first clutch the "nestling period" was 26-28 days, and for the second was about 31 days, probably because part-way through the male had to be hospitalized, leaving the female alone to raise the young. On fledging the juveniles had a pale horn coloured bill, a prominent pale periopthalmic ring and a dark iris.

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ESTIMATING CROCODILE ABUNDANCE IN RIVERS

Crocodiles can be counted using different methods. Two methods, with increasing bias are night time spotlight counting and aerial counting. A 1988 census was conducted of major water bodies in Kenya by Hutton. They used the aerial counting method, using a Cessna 206 aircraft. To reduce observer bias, double or "tandem" counts were used.

Hutton and his observers sampled the Ewaso Nyiro River in three sections. The second section consisted of the stretch of river between the west gate of Samburu Game Reserve and Archers Post. Over a distance of 35km, their estimated number was 17.7 and an estimated density of 0.51. The census was conducted on 11th March, 1988.

During a rafting trip down the Ewaso Nyiro, from near the Samburu Intrepids Club to 1 km past the Samburu Lodge, 17 crocodiles were counted. This was a total distance of 7.25 km of which 4.5 km of the southern river bank lie outside the reserve. This census was conducted on the 5th April, 1991. This stretch of river would give a density of 2.34.

There are dense stands of *Acacia eliator* that line the river bank. This would reduce the visibility of crocodiles in aerial counting. During the rafting trip many crocodiles were seen in the undergrowth. Aerial counting techniques in places like Lake Turkana where observer bias is reduced by the apparent lack of vegetation, yield better results (Graham, 1968).

It is difficult to use the spotlight counting method, because at night navigation over rocks and sandbars can pose a serious hazard. Hippos tolerate boats, if the observers maintain silence and do not agitate the hippos. During the day crocodile abundance can be noted during the peak basking time, when a good majority will be out of the water on the banks or on the sandbars. A total count along the Ewaso Nyiro within the confines of the Samburu and Buffalo Springs Game Reserves, should yield interesting figures that can be compared to results obtained from aerial counting.

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Almost everyone interested in natural history has at some stage wanted to get hold of a copy of a specific journal article on their particular interest - whether it is the hunting behaviour of wild dogs or the propagation of the Madagascan periwinkle. It can be very frustrating to come across a reference to the ideal article, and yet be unable to obtain it.

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"SOOTY MOULD" ON BAOBABS IN ZIMBABWE

I have recently travelled to the 'wild places' around Zimbabwe and was shattered at the extent to which the baobab trees within the areas visited have been affected by a black, sooty-like disease.

This disease has been recorded before in the early 1980's. The identification of the fungus responsible has not yet been confirmed though two names have been suggested by authorities. It was suspected to be a sooty mould and manifests itself in the following ways:

1. Early stages - circular, waxy patches, reddish brown becoming black; at first glance could be mistaken for lichen growth.
2. Mid to late stages - extensive blackening of branchlets and/or branches and/or trunk; coalescing of black pustules into sooty mass.
3. Extreme stage - blackened, weeping branches which drop off easily; defoliation apparent, and chronically ill appearance (takes on the appearance of having been totally burnt in bad bushfire).

The disease would appear, from casual observations, to be found predominantly on the lee side of the tree. No particular age-group of tree would appear to be more susceptible than another. Although drought could possibly be the main catalyst in the rapid degeneration of Zimbabwe's baobab population, this needs to be substantiated, and other potential causative factors examined.

I am preparing a paper with Geoff Calvert of Forestry Commission on this subject. We would appreciate any observations, previous knowledge, records, photographs etc. that you may have that would assist in the investigation of the problem, particularly with regard to rates of infection etc. Historical photos of trees in known locations would be especially valuable. Geoff initiated a similar request through the Editor of Zimbabwe Science News 23, 1/3 1989, but only received one response. This matter is of national importance, and your cooperation would be gratefully appreciated. Due acknowledgement will be given for any contribution used in the published article.

I invite comments from you on the matter and respectfully request your consideration of my request.

Cathy Sharp, P.O. Box 100, Mvuma, Zimbabwe

THE EDEN WILDLIFE TRUST

The Eden Wildlife Trust is a small charitable organization registered in England set up by Mrs Ruth Eden and her husband Brian in the early 1980s. The following are current members of the Board of Trustees: Mr Jonathan Eden, Mr R.A. Hubbard, Mr B.G. Steele-Perkins and Mr R. Craig. The Executive Officer is Mr E.C. (Ted) Goss.

Mr and Mrs Eden used to travel to Kenya frequently to visit the main parks and they came to know the wardens and the many problems they faced. Gradually they became involved with various wildlife projects but as these grew both in size and complexity additional help was needed. At that time Ted Goss was serving as a senior Warden with the Wild Life Department and the Edens enlisted his advice and, where possible,

supervisory assistance. On his retirement from WCMD Ted took on the role of Executive Officer for the Eden Wildlife Trust.

The Trust aims to initiate or assist with animal protection programmes and operates with the agreement of the Kenya Wildlife Service. Some members of the Trust's team are KWS employees and, in turn, the Trust has funded provision of specialised employees who may later be employed by KWS. Among the wide variety of projects undertaken are:

Assistance with the World Wildlife Fund's country-wide Rhino Census
First Aid training for rangers, provision of First Aid Kits and the supply of special equipment for Casu.Vac.
Animal rescue - the Trust runs a helicopter and supporting transport for rhino and other animal rescue and translocation to sanctuaries
Assistance with funding of Mrs. Sheldric's orphan project and provision of supplies for starving hippo at Baringo. Funding to Rhino Ark for the Aberdare fence
Employment - a number of rhino watchers (local Maasai and Dorobo) are employed by the Trust in the Mathews and Loita mountain ranges. They work directly under KWS supervision and indeed some have now been absorbed on to KWS staff
Water - implementation of the water scheme of the Ngulia sanctuary and funding for fencing
Construction of Rhino holding pens
Rejuvenation of the Voi Education Centre and the construction and equipping of their new Library. Initial funding for the newly appointed Librarian
Establishment of a camel unit at Ndiandaza
Restoration of the main gate and lookouts at Shimba Hills Park and construction of ranger housing
Renovations to the water supply for Shimoni Park H.Q.
Provision of two boats and five engines for the Marine Parks and renovation to the old boats in Malindi and Watamu. Setting of trot lines in Watamu and Malindi Marine parks to prevent coral destruction by anchors

New projects for 1992 include:

Erecting a 100ft radio mast at Kiunga to assist security communications for Dodori game reserve and the southern area
Assistance towards the development of Dodori
Provision of five km electric fence at Shimba Hills
Repairs to Ndara bore hole in Tsavo East National Park
Continued support for the Library at Voi, Tsavo East
Fuel assistance for aerial monitoring in Maasai Mara dispersal areas
Elephant radio collaring for monitoring purposes in Meru Park Assistance with water and toilet facilities at Gorbessa Camel Unit
Purchase of boat hulls for Lamu, Kiunga and Mida Creek (KWS will supply the engines)
Construction of camping facilities at Shimoni
Renovation work at Saiwa Swamp Sitatunga Park

Ruth and Brian Eden believed that by establishing the EDEN WILDLIFE TRUST it would be possible to ensure the continuity of their work and these projects are an example of the low key, but essential, tasks undertaken by the Trust in recent years.

The Eden Wildlife Trust aims to assist wherever possible with the conservation of wildlife - Kenya's heritage. For further information contact: Mr E.C. Goss, The Eden Wildlife Trust, P.O. Box 14157, Nairobi

Communicated by Charles Dewhurst.

As the readers of our Journal will have guessed from the presence of their logo in each issue of the Journal, one of the activities of the Eden Wildlife Trust is to partly sponsor this publication. The members of the Editorial Committee wish to express their gratitude for this financial support.

DENDROHYRAX ARBOREUS SHELTERING IN TERMITARIA

In the Langata garden of Pat Frere, which is mostly left wild as it serves a a Bird Sanctuary, the following observations were made. During the month of March, 1987, *Dendrohyrax* were seen to move out of a termite hole in the ground: one adult and two young, the latter were then playing around the hole before disappearing inside. March 1991 Pat Frere again saw several Hyrax pop up from holes in the ground.

The Hyrax in that garden all seem to be *Dendrohyrax* and have been heard to call during most nights for many years. Several of the Hyrax observed by me were in fact *Dendrohyrax*. Jonathan Kingdon (E.A. Mammals, Vol 1. p. 348) mentions that *Dendrohyrax* occasionally shelter in termitaria, but this is the first actual observation of which I have knowledge.

Judith Rudnai, P.O. Box 42220, Nairobi

VIDEO REVIEWS

An Introduction to the Birds of Southern Africa. **VHS Video (PG006) with bird sounds by courtesy of Len Gilliard. An accompanying leaflet lists all the species shown. LLA Productions (PTY) Ltd.**

This is one of two videos, which although primarily about birds in Southern Africa, includes a great many species that occur in East Africa. It came to me having been three weeks in the top selling position in South Africa, and was the winner of the National Television Association Gold Medal for the best documentary produced there in 1990.

The twenty-six Orders of birds found in Southern Africa are presented in more or less the same sequence as that followed in the authorative bird books. Much emphasis is placed, using both words and pictures, on explaining the characteristics of the birds of each Order. To the detriment I feel of saying more about individual species. Much of the video film is excellent, some looks to be of captive birds, a few are obviously in aviaries and, I think, I spotted some stuffed birds! The commentary I find too slow and academic in tone and feel it would have benefited from a lighter touch.

As twenty-five of the Orders consist of Non-Passerines (from the Ostrich to the Red-throated Wryneck and Cardinal and Golden-tailed Woodpeckers), this video is devoted mainly to them, with Passerines (Perching Birds) given somewhat cursory treatment at the end. Among the latter there are glimpses of birds such as the Spotted Thrush and Forest Dark-backed Weaver. Some, especially the smaller birds, are not named on the commentary, which is unhelpful for those without a reasonably good knowledge of African birds. The leaflet however, lists all the species (a few of the names used are peculiar to that region, *e.g.* Black Eagle instead of Verreaux's Eagle, Purple-crested Lourie instead of Purple-crested Turaco, Grey Lourie instead of Go-away Bird, and Plum-coloured Starling instead of Violet-backed Starling), in the sequence in which they appear. There are just over 150, among which more than three-quarters occur in East Africa. Included is each species' number in Ian Sinclair's *Field Guide to the Birds of Southern Africa*, which follows that in the 'new' revised Roberts' *Birds of South Africa.*

An introduction to Garden Birds of South Africa. **VHS Video (PG011) with bird calls by courtesy of Len Gilliard. An accompanying leaflet *Gardening for Birds* by Geoff Nichols, lists the types of plants which attract birds to gardens. LLA Productions (PTY) Ltd.**

Of the two I much prefer this video. Featured are just over 60 garden visitors, categorised according to their food. There is advice on ways of attracting birds into gardens, including natural food sources and putting out food, *e.g.* bread soaked with milk and sprinkled with sugar (?), and cooked 'meallie' (maize) meal for seed-eaters, homemade nectar for sunbirds and, new to me, the provision of bone meal to attract insect-eating birds.

Most of their garden visitors are familiar in East Africa, though the names used in the south are not always quite the same. Among those featured in this video are the Masked, Spectacled and Spotted-backed (known in Kenya as Black-headed) Weaver and Thick-billed (here Grosbeak) Weaver, the Red Bishop, Bully (here known as Brimstone) Canary, the Yellow-eyed (or Yellow-fronted) Canary, the tiny Bronze Mannikin and Blue Waxbill (known in Kenya as Cordon-bleu). There is the wide-ranging Laughing Dove, the Red-eyed species and Rock Pigeon, their name for the Speckled Pigeon.

They too have Speckled Mousebird, plus the Red-faced. The Black-collared Barbet features prominently, there is a glimpse of the Crested (Levaillant's) Barbet and fine shots of the Golden-rumped Tinkerbird at its nest-hole. The aforementioned two members of the Turaco family figure again. Three of the four bulbuls are also in East Africa. In the bush veld a rural garden with a fruiting fig tree may be visited by the Plum-coloured (or Violet-backed) Starling. There is their own Cape Glossy Starling, as well as the Red-winged, the introduced European species and Indian Myna. A highlight is a gorgeous male Malachite Sunbird feeding on flowers in a garden in the Natal Drakensberg. Also found in East Africa are the Black (Amethyst) and the White-bellied Sunbird. Other such birds include the Cape Wagtail, Cape Robin (or Robin Chat), Natal Robin (or Red-capped Robin Chat), Kurrichane and Olive Thrushes, Red-chested Cuckoo, Black-headed Oriole, the Hoopoe, Red-billed (in Kenya called Green) Wood Hoopoe, Brown-hooded Kingfisher and Hadada.

Enquiries about these videos should be addressed to: LLA Productions (PTY) Ltd., P.O. Box 22174, Glenashley 4022, South Africa

Malcolm Ellis, Hay Farm, St. Breock, Wadebridge, Cornwall PL27 7LH, England

BOOK REVIEW

A Field Guide to the Acacias of Kenya **by Malcolm Coe and Hank Beentje with illustrations by Rosemary Wise**

This field guide is a very welcome addition to the literature already existing on one of the most spectacular families of trees in Kenya. It is clear and well illustrated with excellent drawings of all species occurring. After studying the book, anyone interested in working out the names of the many different species will find it easy to follow, with a minimum of botanical terms, and the ones used are all described in the "Glossary of Terms".

The introduction itself makes interesting reading, mentioning in one place all the recent research which has been carried out on various aspects of the Acacia group of trees and shrubs not only in Kenya, but in other countries as well.

In trying out the keys on trees without fruit or flowers, I was beaten in the first attempt, having, unbeknown to me, chosen a variant of *Acacia gerrardii*, which in the field guide is mentioned only as such. Further attempts to key out acacias from armature, leaf and gland pattern proved more successful. But be warned: one has to learn to differentiate between "hooks" and "curved spines" (they also look like hooks). Also it is important to look carefully at several samples for gland pattern as the leaves are often very small. A 10x magnification lens is necessary. On new leaves particularly the gland pattern can be undeveloped and variable.

The above mentioned keys are particularly useful in identifying trees and shrubs not with flowers or fruit. Together with the description of habitat, growth habit and altitude it is possible to determine which species is seen. To my knowledge no other such key exists.

I particularly like the layout of the book with descriptions and the very good drawings all on opposite pages. For a field guide I would personally have liked a hard cover, but this is a small point on this otherwise very valuable aid to identifying acacias in Kenya, without carrying several large botanical works around.

The book can be ordered direct from Oxford University Press, Saxon Way West, Corby, NN18 9ES, UK. Price £14.95.

Lise Campbell, P.O. Box 14469, Nairobi

Obituary: JEAN HAYES, nee Parnell (1923 -1992)

I wonder how many people knew that Jean, that charming and delightful person, flew from Britain to Kenya with three companions soon after World War II in a small aircraft, which they had purchased with pooled resources. She was an outstanding naturalist, whose tragic death in a car accident only a few miles from her beloved home in Naivasha, we have mourned this year.

They arrived in Kenya in July 1949 after a strenuous and hazardous flight lasting for weeks. The story of how they managed to get here, after running out of fuel and money, losing a companion and surviving sandstorms made exciting and amusing listening.

Jean was born in May 1923. The 1939 war put an end to any academic ambitions she might have had, and during it she served in the WRNS in their Transport Section. This is where she acquired her excellent driving skills which were to be so useful in her safaris.

Having had some experience in the provincial theatre in Worthing, England, she gravitated to the newish professional theatre in Nairobi, and Donovan Maule Theatre started by two great troupers from Britain, Mollie and Donovan Maule. And this is where I first met her. At the time, and for many years to follow, I used to take photographs for publicity purposes at the final dress rehearsal of their monthly productions. And I well remember meeting this very attractive young woman for the first time. So we met casually every month, and my impression was that she was no more than a competent actress. It was at the Maules that she was to meet her husband to be, Charles Hayes.

Time went on. Jean joined the EA Natural History Society in 1960. I have often wondered what motivated her, a person with little formal education, to join the Society which was to lead her to so much fulfillment and creativity, and I regret not having asked her. I became Chairman of the Society in 1969 and the record shows that Jean joined its Executive Committee in the following year. She became the Assistant Editor of the *Journal* in May 1973, the Editor at that time being Dr Peter Greenway. When he was taken ill, she became Acting Editor, and in May 1976 took on the full editorship on his resignation.

In April 1982 Jean, having moved some time previously to live permanently in her lovely cottage on Crescent Island in Lake Naivasha, decided to resign as Editor because of the difficulties created by her relative isolation.

But dates do little to convey what Jean achieved in her life. After leaving the Maules she ran a very successful agency which produced audio-tapes for broadcasting and advertising. Having become an expert in tape recording, she used her newly acquired knowledge to record bird songs, good enough to market commercial tapes. Her interest in natural history, however it began, made her study thoroughly the subjects which fascinated her. The first one was ornithology and she certainly became an expert on birds. Next she turned to botany and nobody could deny her knowledge of both wild and garden flowers. Her house on Crescent Island was surrounded by a garden which was a sight to see, and its birdlife was a joy to observe and listen to. She had built up a large library of natural history books and her love for Africa had led her to acquire an envious collection of Africana books. The cottage walls were covered with paintings.

Jean knew nothing about editing when she took on the *Journal*, but she made a special study of the way scientific papers should be written and became an expert in proof-reading such publications. Latterly, she had become fascinated with computers which gave her many happy hours in a life which could have become lonely if she had given it a chance.

She was an active member of the Naivasha branch of the East African Women's League and was at one time its Chairman. Perhaps her newest activity was painting in water-colours and she became good enough to win the occasional prize. She was an excellent lecturer and guide and it was a pleasure to go for a nature walk with her; and whether the subject observed was a bird, animal, insect or plant, she had something interesting to tell about it.

Above all she was a kind and generous person. She loved life and was happy to share it with friends, of whom she had many. It was a privilege to have known her and loved her. We miss her.

John Karmali, P.O. Box 441544, Nairobi

MEMBERSHIP:
This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced naturalists; free use of the joint Society - National Museum Library (postal borrowing is possible) and copy of the EANHS Bulletin every three months. The Society organises the ringing of birds in eastern Africa and welcomes new ringers. It also runs an active Nest Record Scheme. Membership rates are given below.

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The Society publishes, in collaboration with the National Museums of Kenya, the Journal of East Africa Natural History. The Journal is published twice a year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

EANHS BULLETIN:
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SCOPUS:
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Subscritions are due on 1 January. From 1 July you may join for half the yearly subscription and receive publications from that date. Application forms for membership are obtainable from the Secretary, P.O. Box 44486, Nairobi, Kenya.

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ON PAST AND RECENT VISITS TO INDACHANT - THE RIFT VALLEY SWAMP

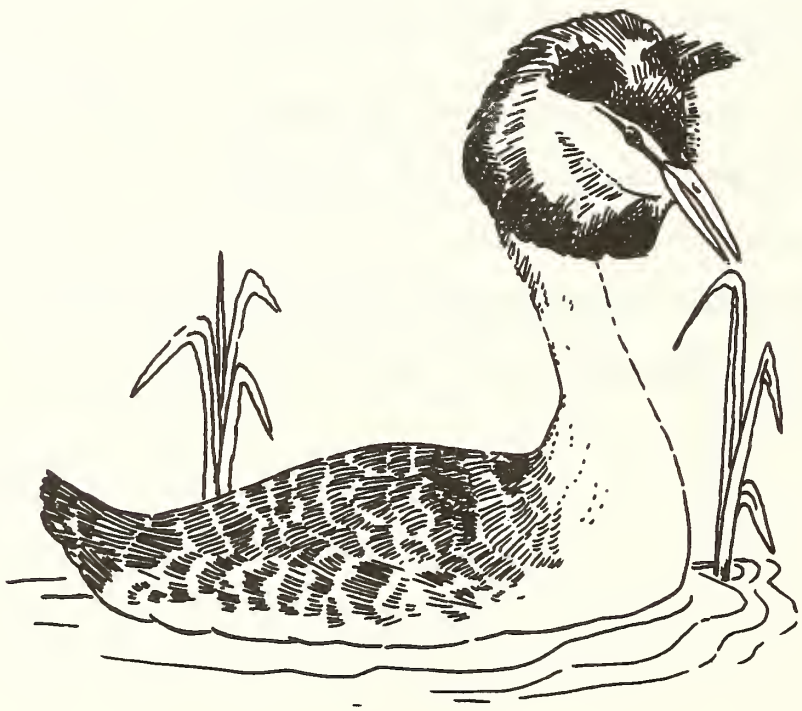
Introduction

In the Bulletin of the East Africa Natural History Society 1977 September/October, an account was given as a 'Note on the Flora and Fauna of two seasonal swamps in the Rift Valley' by G.R. Cunningham-van Someren and Dave Richards.

Historical

These flooded grassland swamps were first noted by Dave Richards from the air and on 26 June 1977 he was able to visit the area and confirmed that the bird life was spectacular with many Great Crested Grebes displaying. Dave and the writer visited it on 3 July 1977 but the depth of water at the south end was too deep for us to wade, therefore on 17 July 1977 we took a boat and were thus able to move freely all over the open water finding nests of many waterfowl: grebes, egrets, herons, ibises, ducks, Long-tailed Cormorants, etc.

Thereafter the swamp, unnamed as yet, was visited many times by interested bird-watchers, through to June 1978 when the water level had receded to such a low level that the area was unattractive to birds and bird watchers alike. The whole swamp area became overgrown with tall *Sorghum verticilatum* grass.



The Great Crested Grebe

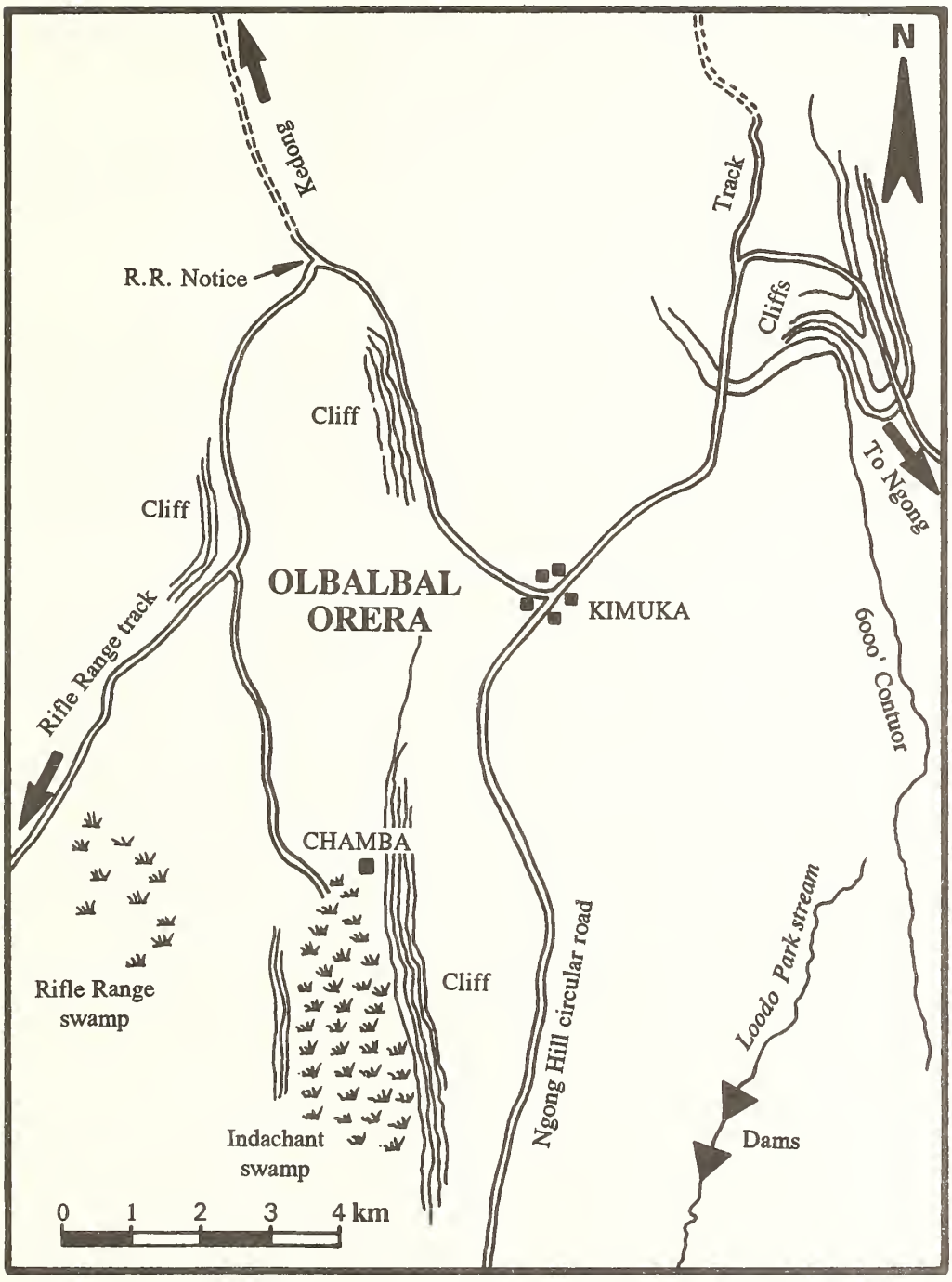


Figure 1: sketch map of the area

In 1977 the area was uninhabited, but gradually a few Maasai people moved in, one actually fencing a small plot at the North (entrance) end with a thorn boma. Efforts to find a name failed, the old Maasai herdsmen encountered did not understand our 'ki-kitchen' Swahili and they did not speak Swahili. So the area was designated 'Rift Valley Swamp' West of the Ngong Hills, Richards' Swamp or Rifle Range Swamp since the army has a range to the west, hence the title of my original notes: 'two swamps'.

In July 1991 the area was visited with Charles Dewhurst but there was virtually no water, however in conversation with a couple of Maasai men we learned that the area was called 'Olbalbal Orere', but there was no name for the actual flooded area. Some flooding must have taken place at the end of 1990 to early 1991. We now know that there was some water in the swamp in 1985 (S. Thomsett, personal communication).

The Location

From the map it has been established that the swamp lies on 36°35' E - 1°25.5' S. It is roughly 209ha in size at an altitude of around 1630m. When the area is full of water it is necessary to travel on higher ground, twisting between the acacia trees (see sketch map, Fig.1). The swamp lies roughly in a North-South direction, West of the Ngong Hills and the Ngong Hills Circular Road, bound to the east by an escarpment of good rock faces up to some 100m above the swamp. To the West lies another but slightly higher swamp area (the Rifle Range Swamp) beside an area now occupied as an army rifle range. When the range is in use red flags are posted on the track.

Visit to the Swamp on 7 July 1991 and 21 June 1992

Charles Dewhurst invited me to join a party for a visit to the swamp as word had it that there was water. It was almost a fiasco with only a muddy pool at the South end well churned up by cattle. Nevertheless we were well rewarded with the capture of several large Water Scorpions, *Nepa* sp., which were well infested with small leeches, the glossiphioniid, *Placobdelloides multistriata*, blood sucking somewhat slug-like creatures. This was uncommonly interesting. Charles had found the leeches on *Nepa* sp. elsewhere in the Rift Valley, yet no leeches have been found on water scorpions in Miotoni Dam in Nairobi. The leeches are supposed to feed on reptiles such as turtles and crocodiles (R.T. Sawyer, personal communication). Additionally we noted two occupied nests of the Egyptian Vulture on the cliff, well seen through the telescope; the Verreaux's Eagle was present but not nesting.

One likes to label specimens with the locality where found. Two wandering Maasai could only tell us the area was 'Olbalbal' and with that we had to be content. The 1:50,000 map also gives 'Olbalbal Orere'. Better luck favoured us on our 21 June 1992 visit when again two Maasai men visited us. Yes, the area was Olbalbal Orere but the swamp was 'Ndasha' as I wrote in my note book - 'No' said the Maasai and one man wrote 'Indachant Olparbal' - so now we know!

On this last trip, 21 June 1992, Charles Dewhurst, Jill Sowerby, G.R. Cunningham-van Someren and Simon Thomsett, with his 'brother' Holmes (his dog), swept the landscape to identify the birds. We found the water was too shallow to launch the boat the 4-WD carried. We waded. Charles with his net captured the aquatic fauna, Simon scanned the cliffs for raptors, while I waded to seek aquatic flora and larger fauna. Later we were joined by Karen and Mark Stanley Price. We met up with Fleur Ng'weno, Maryanne Kamau, and their bird-watching party from the EANHS. Much interest was evident in general natural history and of course the consensus of opinion was that this

utterly interesting area really should be 'protected' in some way for the benefit of all, for posterity.

Notes on the Birds, Fauna and Flora on 21 June 1992

There was just enough green emergent vegetation, mostly *Cyperus* sp. and grass (sp. indet.) to hide many water birds even from those scanning the area with binoculars. Taller birds, egrets, yes, could readily be seen, but it was not until one or two of us ventured into the shallow water and waded around, that unexpected numbers of stilts were put up. Simon and I put up a pair of Redbill Duck to note they had three flappers just ready to fly, these would jump and drop down only six or seven metres away while anxious parents flew around.

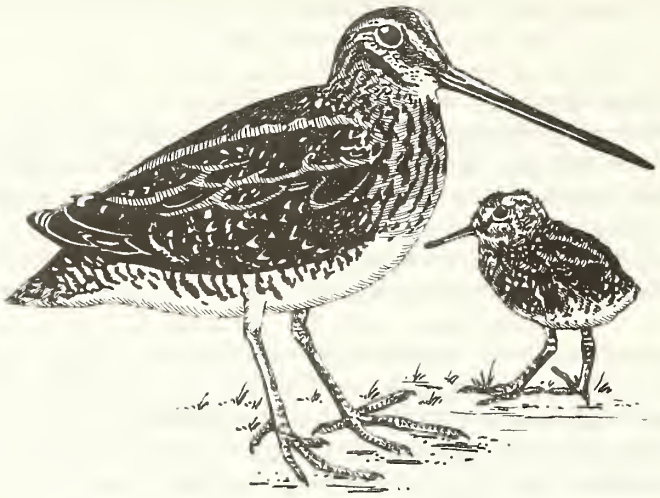
At 13.00 hours there was a mass flock flight of Glossy Ibis, estimated by three of us at over 100 birds. These were put up by the appearance of an immature Fish Eagle - the eagle harried the birds which split into two flocks; one moved North, the other South and as the eagle disappeared from view, the birds settled. Now, we had seen odd Glossy Ibis and had been able to compare them with the Hadada, but we had no idea of the numbers in the swamp until, thanks to the Fish Eagle, we were awarded a clue.

We had lunch under an acacia by the water's edge and some waded out into the swamp. Birds seen included 3 pairs of Little Grebe (Dabchick) with small juveniles, proof of breeding, Maccoa Ducks, Hottentot Teal, Red-knobbed Coots, Southern Pochards, herons in the more open small areas of water by acacia trees, and a pair of Egyptian Geese displaying. Blacksmith Plovers came within a few metres of us, just because all was quiet and undisturbed, but while wading we put up Painted Snipe and African Snipe which we would never have seen unless they were disturbed. Astounding to me was the presence of Open-billed Stork - a bird that feeds on aquatic gastropods (snails), yet the few snails we found were very immature *Bulinus* sp.

There were both Whiskered Terns and White-winged Black Terns, but in very off plumages, rather speckled. As we lunched a pair of Speckle-fronted Weavers were busy carrying nest material into the top of a small acacia in the water directly in front of us.

Maybe a few weeks later when the North end of the swamp dried and the *Sorghum verticilatum* grew up, more birds nested, but I doubt the success we had in 1977 with many nests of Great Crested Grebe (not seen 21 June), Black-necked Grebe or the tree colonies of Spoonbill (we only saw one bird!), Sacred Ibis, egrets, *etc.* will be repeated. In 1978 two pairs of Crowned Cranes nested. As a point of interest, and important from the view of trying to make a bird census and count under these swamp conditions, many birds were hidden or partly hidden by vegetation and would be overlooked.

On the 21 June visit we all saw egrets, herons, storks , yet saw few of the normally accepted species in the food chain which the birds are known to take, grasshoppers, dragonfly nymphs, tadpoles, small frogs, lizards and mice, snails, so what were they eating? There were Spoonbills which swish the bill from side to side. Sacred Ibis that take insects, etc, Glossy Ibis which probe the mud like Painted Snipe to extract worms, crickets. Terns that hover and dive onto flying insects, dragonflies, Ephemeroptera. Dabbling ducks feeding just below the surface, Egyptian Geese which are vegetation grazers and there was little green vegetation. Open-billed Storks, snail eaters but few snails present certainly not of a suitable size. Why Pelicans, fish eaters, but no fish?



The African Snipe

I asked myself, as I had done in 1977, 'Why all of a sudden, when water had accumulated in this otherwise dry hollow, did it attract all these species of birds, even inducing many species to breed? How did the birds know that conditions would be suitable and that there would be an adequate food supply over the period? Where did the non-flying, prolific crustaceans come from, after a period of many years without water? The snails, the terrapin, the frogs and the sedentary plant species, including rare and unusual plants? This is an enigma, we can postulate via eggs, spores, seeds or partly digested vegetation, carried by birds and so distributed.'

We can go further, what impulse made the birds move to this site, which must have been new to them? What impulse made the birds "decide' conditions existed and would continue to exist long enough for them reproduce?

Simon then staggered into out picnic site carrying a dead Great White Pelican he had found in the water. Naturally this was of interest to us all. The cause of death eluded us. We were not equipped to perform a *post mortem* or even qualified to do so, but an examination of the body was of interest. There was no clear evidence of injury.

Attached to fleshy parts, some small *Bulinus* sp. snails were found - confirming that snails we recorded in 1977-78 had apparently survived to 1992 or had been reintroduced by the birds (how else?). In addition, the carcass harbored innumerable feather lice (Mallophaga). These were collected and preserved for examination by specialists overseas. Alas we had no scales to weigh the bird but the outstretched wing span was 2.97m.

Invertebrates (Notes by C.F. Dewhurst)

This temporary wetland was very rich in aquatic life. Although systematic sampling was not undertaken, a small collecting net produced a very exciting aquatic fauna. Microscopic life was not looked for, however there was a 'soup' of the Class Branchiopoda (Fairy shrimps and Water fleas), specifically the Anostraca (Fairy Shrimps). A number of different Fairy Shrimps occur in different habitats in highland grasslands and rocky outcrops (F. Ng'weno, personal communication). Fairy Shrimps are characteristic of temporary water bodies, and have the habit of swimming on their backs. The males are

distinguished by having very large, modified antennae which are used to hold the females during copulation. No Tadpole Shrimps (Order Notostraca) such as *Triops* sp. were found, although Fleur Ng'weno recently found them on rock outcrops in the Kajiado area.

Very noticeable were the Order Conchostraca (Clam Shrimps). I suspect that two genera occurred here, however they will require further detailed study. These crustaceans were very abundant, and many were attempting to mate. It is always a delight to see these creatures shuffling about through the waters like little out-of control mussels. By far the most abundant of the smaller macro-organisms were the Order Cladocera (Water Fleas). Further study will probably reveal a great number of different families of these crustacea which are so important at the lower end of the food chain. The black Ostracoda (Seed Shrimps) were not found at this site, at least not in their typical shape which is oval, the little creatures found here were almost round.

No leaches were found. One nymph of the Water Scorpion (Order Hemiptera), *Nepa* sp. was found by Alistair Reid, a six year old enthusiast. I had, last year, collected leaches of the genus *Placobdelloides* from adult *Nepa* sp. in more or less the same locality (see above). Tubificidae (Sludge Worms) were found, although not in large numbers. Small individuals of the water snail *Bulinus* sp. were also seen in quite large numbers at the southern part of the swamp. None were found during a visit the previous week. On the surface were scattered tiny red velvet-type mites, probably Sub-order Hydracarina.

The most spectacular inhabitants were undoubtedly the Planarians (Class Turbellaria). Three different types were found, probably different genera. Some were a pale blue colour and one was very large at about 3cm long. Some were dull green colour. The third type, of which only one specimen was found, was white. I would be very interested to know of a turbellarian taxonomist who may be able to provide a name for these spectacular flatworms.

Relatively few water bugs were seen, apart from the *Nepa* specimen; only one Pond Skater (Gerridae) and one Saucer Bug (*Ilyocoris* sp.) were found. More abundant were the Backswimmers (*Notonecta* sp.) and Water Boatmen (*Corixa* sp). An interesting find was that of Chironomid (Diptera) adults which had been struck down by an entomophagus (insect feeding) fungus before they had had time to fly away - a bio-control method for mosquitoes??

A few adult Water Beetles (Coleoptera) were found, some looked like the European *Agabus*, and there were a number of the very predatory Water Beetle larvae of the family Dytiscidae collected in the sweep samples. No adults were collected. When the sun shone, a few Dragonflies (Zygoptera) and two Damselflies (Anisoptera) were seen. Nymphs were found in the water, and one moult skin of a large dragonfly was collected by the writer. The dead Pelican found by Simon Thomsett produced some very large feather lice (Mallophaga), which will be identified. No mayflies (Ephemeroptera), adults nor nymphs were found.

Amphibia

My report of 1977 included five species of frogs. On a later visit with Alec McKay and Bob Drews, a herpetologist from the USA, we found that unusual frog *Chiromantis petersi*. The female, while extruding eggs, covers these in a white foam while the male supplies the sperm. Thus a 'nest' is made, maybe in a bush or on a grass stem above water, a somewhat brittle but slightly glutinous foamy mass is formed. The tadpoles develop within and when ready drop into water below to assume an aquatic life. This record was probably the furthest west distribution record for this frog. On 21 June 1992, we only found one tadpole

and one very small toad, whereas in 1977 the upper swamp swarmed with the 'fish-like' tadpoles of *Xenopus* sp., the clawed toad. Question, "How did the *Chiromantis* find this temporary habitat?" While on aquatic fauna we did not see Terrapins, *Polemedusa subrufa* which were present in 1977 and 1978, the same question applies.

Aquatic Flora

Conditions on 21 June 1992 differed somewhat from those on 23 April 1978 as the water receded. The Water Fern, *Marsilea* sp. mentioned in the original report was represented by two species *M. macrocarpa* and *M. gibba*, but on this last trip the fern was too young for identification as no sporocarps had been formed.

Nitella knightiae (Family Characae) was present once again. This plant is not mentioned in Agnew's *Upland Kenya Wild Flowers*. Only one plant of the insectivorous submerged aquatic *Utricularia gibba* (Family Lentibulariaceae) was found but it was not flowering, as it was in 1978. They are interesting plants with hundreds of small black bladders, which capture minute aquatic creatures. *Aponogeton abyssinicum* (Family Aponogetonaceae), with floating leaves and white flowers, were very numerous, a few with partly blue flowers. The rare *Elatine* (Family Elatinaceae) as a first record given in our 1977-78 report is now identified as *E. triandra*.

Jan Gillet of the EA Herbarium now at Kew identified most of the original botanical gatherings - specimens were labelled 'Rift Valley Swamp'.

Conclusion

The seasonal swamp is a prime example of what is now termed 'biodiversity', and there is an urgent need to conserve this biodiversity for the benefit of all, the flora and fauna and humankind in such an interesting site.

It is situated in traditional Maasailand, nomadic people with their stock moving as required by season to seek water and pasture, but today changes are becoming apparent. Around the swamp now, there are a few homesteads with semi-permanent buildings, fenced all around. One enterprising individual has even erected a barrier across the track with a notice requiring picnickers and campers to report to his farm, with a fee of course to permit passage (there was no farm in 1977/78). To the South, all the large acacia have been cut down for charcoal. Rock-climbing enthusiasts have invaded to ascend the cliffs, in so doing disturbing the rock nesting raptors, Verreaux's Eagle, Egyptian Vulture, Lanner Falcon, etc. What of the future?

G.R. Cunningham - van Someren, P.O. Box 24947, Karen

NOTES ON SEASONAL WETLANDS

In much of Africa, seasonal wetlands are not the exception - they are the norm. Yet the importance of seasonal wetlands has often been overlooked by scientists and policy makers. The life of large areas of Kenya are adapted to conditions that alternate between wet and dry - sometimes twice in one year, as in the Nairobi area, sometimes every eight or nine years as in the Indachant Swamp.

Crustaceans such as Fairy Shrimp, Clam Shrimp, Seed Shrimp and Copepods lay eggs as the water recedes. The eggs lay on the bottom through hot days, cold nights, and the growth and decay of vegetation. When the pond fills again, they hatch and the life cycle

continues. Fairy Shrimp do not survive in permanent water where there are fish; their very survival depends on periods of drought.

Amphibians and reptiles usually survive dry periods aestivation, shriveling up and lowering their body functions; but can their populations sustain breeding only once a decade? Birds, of course, fly, as do insects such as water boatmen, diving beetles, 'water scorpions' and dragonflies, but how do they know that the water is there after a number of dry years?

When seasonal wetlands fill up after a period of drought, they are incredibly rich. Large amounts of nutrients are released from the soil and the populations of crustaceans explode; sometimes the water is cloudy with copepods. These are obviously good breeding conditions for birds, and the fact that the wetlands were not there in previous years may also mean relatively low numbers of predators. In succeeding years the level of nutrients released falls, the crustacean population stabilizes, and the area is not as attractive to birds.

The question remains, why 1977,1978 and 1992? Does the area flood only when a good rain follows a drought year?

Fleur Ng'weno, P.O. Box 42271, Nairobi

MWEA NATIONAL RESERVE - 29 MAY-1 JUNE 1992

Twelve members of the Society spent the Madaraka Day weekend in the Mwea National Reserve, some arriving on Friday and the rest on Saturday. The Reserve is about 180 km from Nairobi and is administered by the Embu County Council. The road from Embu is best used, and has been recently graded; however, it can be very dusty.

The Reserve is mainly thorn bush between the Thiba and Tana Rivers and on the Kamburu dam. Camping was in the camp site near the entry gate and headquarters, some of the tents being under a large flowering *Terminalia*. There had not been as much rain as should have fallen by this time but several trees and herbs were in flower.

The reserve has previously been described by Imre Loefler in Swara Vol.12 No.3 P.8 (May-June 1989). His report is very fair although there is now no sound of motor traffic and our nights (and days) were undisturbed.

This is a place for enthusiasts for we saw no elephant or buffalo, although the signs were all around, including trees pulled down across the tracks which required an axe or a tow rope. Hippo Point on the dam was a delight, watching the large number of crocodiles, the hippos and water birds. A very unafraid Nile Monitor came and sat a few feet from us and terrapins swam around. The influence of the water administrators was demonstrated dramatically since on the first day we watched crocodiles and many birds including water thicknees, *Burhinus vermiculatus,* on a sand spit which the next day was totally under water, a large inflow evidently having been allowed from the Masinga dam upstream.

The thickness of the bush on the circuits nearer the water means that this is not an ideal game-viewing reserve, and one should not go for that reason alone. A few more view points over the water and picnic and stopping sites would be a great advantage.

Two trips in the reserve's new boat were organized (the first in it incidentally) and the water's edge seen from the other side. We came back with a gillnet which had been set across the mouth of one of the bays, and it contained some very small tilapia. Even with the lack of rain the edges of the dam that we saw seemed in better shape than as reported by Loefler three years before.

The birds are one of the main attractions. We added 16 species to the reserve's list, and one of the highlights was a pair of Scaly-throated Honey-guides, *Indicator variegatus* which sat quite still in a tree and allowed close approach and identification. The splendid call of the Pale Chanting Goshawk was recorded.

Peter Le Pelley

EANHS OUTING TO MWEA NATIONAL RESERVE, SATURDAY 30TH MAY TO MONDAY 1ST JUNE 1992

Setting off from Nairobi early on Saturday our vehicle took the road to Thika, then turned right heading to Garissa and later left towards Embu. Thika township had many yellow *Cassia spectabilis* in flower. By the roadside the pale yellow and also the purple *Hibiscus cannabinus* were in bloom in wet grassy ditches. Pausing near Masinga Dam for coffee we saw several *Combretum zeyeri*. Already the Combretaceae were noticeable, either *Terminalia* sp. with a single wing around the dry seed or the *Combretum* sp. with 4 and 5 wings. Yellow *Gnidia latifolia*, a small shrub was quite conspicuous as we motored towards the Reserve, turning off 14 km south of Embu.

We arrived at the campsite for lunchtime. It was a dry area, without grass, the rather bare ground covered with weedy shrubs, some of which were removed before we could put up the tents. The first arrivals had sensibly bagged a shady spot below a large *Terminalia prunioides*, with small red fruit. Not far away were several of the many thorn trees in the area; *Acacia senegal* with 3 point thorns, *A. mellifera* with its distinctive leaflets and *A. tortilis* with unmistakable curled pods and 2 kinds of thorns.

Around the site were several bare trees with thinly peeling scrolls over a green bark. This was *Commiphora africana*, horribly variable. Elsewhere several trees were in full leaf, softly hairy and green with an outsized middle leaflet to the trifoliate leaves. We had an afternoon drive down to the nearest water, at Hippo Point on the Thiba river where we had wonderful views of large crocodiles on sand banks opposite. A *Bridelia* sp. was quite common in the sandy soil and nearby was a large *Terminalia kilimandscharica*, its red fruit glowing in the afternoon sunlight. *Sterculia africana* trees had a shiny maroon bark, yellowing leaves, little green cups of flowers and even a few fruit. There were several *Grewia* sp. here, all leaves with typical serrate edges and 3 veins from the base; *G. villosa, G. bicolor, G. truncata, G. tembensis.* Also noted there was a low bushy *Combretum exalatum* with typical fruit and large curled up leaves.

On the return to camp we paused at the only Baobab, *Adansonia digitata,* in the reserve, growing at the Kamburu Dam Viewpoint. We continued to see typical dry country trees; *Boscia angustifolia*, its shiny grey bark with horizontal wrinkles and the Desert Date, *Balanites aegyptiaca.*

The next morning on a short walk near camp I noted *Zanthoxylum chalybeum* with knobby spiny trunk, *Maytenus* sp., shrubby *Rhus natalensis* with shiny leaves and later *R. tenuinervis* with crenate hairy leaves, both of course trifoliate. *Pappea capensis* had few typically oblong leaves and *Ormocarpum mimosioides* had conpound hairy leaves. *Albizia amara* had a few pods. Returning to the river we stopped some time at a dry river bed where *Acacia robusta* and *Newtonia hildebrandtii* provided deep shade. In the sunshine once more the spindly little trees of *Combretum aculeatum* had their bendy branches covered with small leaves mixed with yellow to pink fruit. *Acacia brevispica* was

plentiful, recognized by the leaves always folded and drooping. *A. nilotica* with its thick pods was also in evidence.

Down at the river we all enjoyed a boat trip. Large tree Euphorbia were seen on the shore in big clumps. We were surprised by the lack of floating or shoreline water plants but at least the birds could be viewed with ease. A floating fruit, green and woody, larger than an orange remains a mystery. We passed very many and fished one out. When broken open we could only conclude it belonged to the Cucumber family.

On the Monday a final run in a different direction allowed me to collect my first Boswellia, of frankincense fame, although not this one, *B. hildebrandtii* which is illustrated in *Kenya Trees and Shrubs*. A really gnarled small tree with brown lumpy branches was *Lannea rivae*. In the reserve we also noted *Delonix alata, Platycelyphium voense*, sadly only in fruit, *Phyllanthus* sp., *Terminalia prunioides* and *Cordia ovalis.*

On the return journey, having lunch on the sandy shore beside Kamburu Dam, there were two more beautiful *Combretum* sp., their exact identity in doubt so now at the Herbarium along with a dozen others. Altogether some 34 woody plants were noted - a very conservative selection. It would be good to have a complete botanical list of the area if this has been done? It is typical Acacia-Commiphora bushland with many *Combretum.*

Ann Birnie, P.O. Box 30158, Nairobi

SOME NOTES ON HERBACEOUS PLANTS FROM MWEA NATIONAL RESERVE

Flowering plants were not plentiful owing to the dry conditions prior to our visit. Only a few showers had fallen a short time before our arrival and a heavy shower on the day made everything look fresh.

In the cleared campsite interspersed with sparse grass were plenty of prickly sub-shrubs - *Blepharis maderaspatensis* with whitish/mauve flowers and several more species in the Acanthaceae family notably the lovely *Dyschoriste hildebrandtii* and *Monechma debile.* Large clumps of a *Kleinia* sp. (Compositae) were seen, but not in flower, so could not be identified to species. A species of *Pupalia* (Amarantheceae) was seen. The family has recently been revised and the name for this species does not figure in Agnew, *A Flora of the Ferns and Herbaceous Flowering Plants of Upland Kenya.* However, correct botanical name or not, it deposited plenty of sharp seeds in socks and trousers. Seedlings of several acacia trees and *Solanum incanum* likewise made walking off the path quite uncomfortable.

Lantana camara (Verbenaceae) was much in evidence in the previously cleared campsite of the National Youth Service as well as along the river and tracks and in the dry river beds, where we walked in the evenings.

In the riverbeds was an abundance of creepers such as *Cardiospermum halicacabum* with the lovely balloon seed capsules and *Acacia brevispica* growing in tangled masses over fallen trees and shrubs of the *Rhus, Cordia* and *Ruttya* sp. Many herbs had germinated in the dry river beds such as *Trichodesma zeylanicum, Heliotropium, Phyllanthus* and *Solanum* sp. The beaches along the Tana River gave us examples of the first plants to occupy beaches after flooding, namely *Sphaeranthus ukambensis, Ludwigia stolonifera* and *Eclipta alba.*

The showy *Pachycarpus schweinfurthii* (Asclepiadaceae) was found in the open woodland as was *Vernonia stenolepsis* (Compositae).

With so many different habitats it would take some time to make a thorough study of all the different areas of this lovely national reserve.

Lise Campbell, P.O. Box 14469, Nairobi

A FOSSILIZED ELEPHANT TOOTH IN KAKAMEGA FOREST

The Kakamega forest in Western Kenya is a representative of Guineo-Congolian forests of Central and West Africa. The mammalian fauna in Kakamega is dominated by small mammals with no recent records of large herbivores. The largest antelope is probably the red forest duiker, *Cephalophus harveyi*, but bushbuck may occur. Prickett (1965) reported that large herbivores were present in Kakamega up to early 20th century when they were reported in Kakamega in 1912.

On 18th August 1992, while the KIFCON/NMK mammal team were searching for antelope pellets on plots, I spotted the tooth of an elephant on the forest floor in Buyangu National Reserve. The site where the fossil was collected had been logged about a decade ago, but there is currently a lot of regrowth.

In the first instance it was unbelievable knowing that the elephant had long disappeared from this forest. Once I picked up the tooth the weight indicated that it had fossilized to some extent. Parts of the tooth were complete with sandstone while others were boney but with all the cavities filled up.

The fossil tooth was taken to Nairobi and handed over to the Archaeology Department, NMK for dating. Dr Meave Leakey said that the tooth was half fossil probably 100 years old, which coincides with the last records of elephants in Kakamega. Accurate dating of the tooth is in process.

Reference

Prickett. 1965. The Living Forest.

Mwangi J. Gathua, KIFCON/NMK Biodiversity Survery, National Museums of Kenya, P.O. Box 40658, Nairobi

HELP FOR THE ABORETUM?

'The Nairobi Arboretum is a pleasant, shady park within easy reach of the centre of Nairobi, in the capital of Kenya. It is popular with both residents of the City and the many visitors who pass through, who want to spend a quiet afternoon in cool and pleasant surroundings.'

So begins the illustrated booklet by the Government Printer of 1958 - price 50 cts! The above quote is almost as true today as when it was first printed. The Arboretum was started in 1907 and there were additions of trees for many years. But what exactly is the situation today? I have been interested for some time in this "green lung" of our city. The place is still not really safe from thugs and there have been attacks on visitors so I cannot say it can be freely visited any time. However at the weekends it is usually well used, in the

way that I'm sure would have delighted the original gardeners and planters. Groups of picnickers gather under the mature trees, children play games, choir groups and Sunday school outings can often be seen and pairs of lovers stroll along the paths. The car park is often quite full and the small kiosk there does good trade.

The Arboretum is still administered by the Forestry Department as it was from the beginning. With a restricted budget, they keep the grass under control and have recently pruned hedges and done much to tidy the place. They also have a small nursery. However much more could be done to turn this area into both a recreational and educational centre of some note for the city.

The Wednesday morning bird walkers regularly visit as there are many birds to be seen and even tourist bird groups occasionally visit. Right beside the gate are the Girl Guide Headquarters and they also could use the Arboretum for training in observation and for understanding the environment - some of their aims. There have been several walks there by both the KMS and EANHS. We have looked at a great number of trees, both indigenous and exotic. The short list given to the group contains only 60 different kinds of tree. Most of the labels on trees are correct with a few missing or incorrect. A document in the Herbarium listed all the tree plantings for many years. Most trees are over 30 years old and many are much more venerable.

During my visits I have noted the trees in flower or fruit but much more could be added to make a file for those really interested in the natural history of the area - which does cover 70 acres. Anyone who would like to make suggestions about the Arboretum, in all its facilities, please contact me either through the EANHS or privately. Would it be possible to set up an *ad hoc* committee "Friends of the Arboretum"? Anyone who is interested in the Arboretum please contact me, either through the EANHS or privately.

The arboretum forester is Mr Kariuki, who has been there for two years and done much to improve the facility on a restricted budget. A list of some 405 tree species has been compiled, and details are being checked.

Ann Birnie, P.O. Box 30158, Nairobi

GLIMPSES OF ETHIOPIA AND KARAMOJA THROUGH A LANDROVER WINDOW

One of the fringe benefits of working with rinderpest today is the opportunity to visit areas often denied to casual visitors. In March this year I was fortunate enough to spend a week travelling in northern Ethiopia. Whenever possible the highland areas were cultivated or heavily grazed leaving little room for wild ungulates or other large mammals. Baboons (probably *Papio anubis*) were not uncommon on steep rock faces such as the escarpments of the Rift Valley and the Blue Nile system, and I twice saw grivets in areas with some remaining forest. Late one afternoon rounding a bend on the road between two villages in a settled area, an unidentified animal resolved itself into a pair of mating serval cats who appeared relatively unafraid of our vehicle as, *post-interruptus*, they reluctantly trotted into the bush. Whilst visiting the camp of a vaccination team near Fiche we found a fresh Greater Kudu bull's skull and horns being dried behind a tent. We were told they are still not uncommon in the drier rocky valleys; but "not uncommon" may be relative and they are obviously now even less common. The bird life was rewarding with frequent sightings of the common endemic species such as Blue-winged Geese, Wattled Ibis, and also of

migratory European Cranes. At Lalibella, the site of famous monolithic rock churches, and unspoilt by tourism for over 10 years, Lammergaiers and Thick-billed Ravens fed on refuse, and flowering hibiscus and jacaranda at the recently renovated hotel allowed an opportunity to watch Tacazze sunbirds within the watershed of the Tacazze river.

April provided a visit to Karamoja in northeastern Uganda, where the only suitable accommodation north of Kaabong was at the Rest Camp in Kidepo National Park. On the plains below the camp we saw a herd of some 120 elephants, a herd of several hundred buffalo and numerous zebra, hartebeest, waterbuck and oribi. Unfortunately our interests in the surrounding cattle population precluded a sightseeing trip around the park but staff told us that giraffes and all three larger cats are frequently seen. The park is scenically attractive and worth a more leisurely visit. The camp is a comfortable place to stay but guests should bring their own provisions although chickens can be purchased from the camp staff, and non-Uganda residents must expect to pay in dollars. Access by air is possible, as it also is by road through Kitgum now that security is improving. Outside the park, however, I saw no wildlife, other than a troop of vervet monkeys, in areas where twenty years ago I regularly saw zebra, topi and giraffe amongst others. There are now no lions left to threaten the cattle in quarantine stations - but then again there are no quarantine stations left either.

The reason for this sad decline is not rinderpest but bullets. It takes time to become accustomed to the profusion of personal armaments, including automatic rifles, machine guns and rocket launchers, on open display throughout Ethiopia and Karamoja. Disciplined though the owners are in the use of their weapons amongst people, hunger and the temptation of moving target practice have encouraged the widespread shooting of wildlife. At small markets in Karamoja armed youths were selling the skinned carcasses of oribi (?) and other small antelopes. In Ethiopia colleagues spoke of the decline of the oryx in the Awash National Park and of the Mountain Nyala in Bale. With this and the disintegration of Somalia one can only hope that the southward spread of these firearms will be checked.

P.B. Rossiter, P.O. Box 32, Kikuyu

BOOK REVIEW

The Butterflies of Kenya and their natural history by Torben Larsen
Oxford University Press, 1991. ISBN 019 854011 6

Torben Larsen's new book will be welcomed by everyone with an interest in the butterflies of Kenya. For all who can afford the 85 pounds sterling price tag, the frustrations of shorter field guides (so many missing acraeines and lycaenids!) and the bewilderment induced by less focussed tomes (all those *Euphaedra*!) will be things of the past. Here, in one compact volume, are 871 species descriptions and colour illustrations, together with an appendix by Larsen and Steve Collins covering new genera, species and subspecies discovered during the research for this book.

Each species account has sections on identification, habits, early stages (including larval foodplants), and distribution (both within and outside Kenya). This comprehensive and detailed systematic section is preceded by 11 useful chapters on the general biology of Kenyan butterflies.

The text is easy to read and technical terms are kept to a miminmum. A brief glossary helps to deal with those that are unavoidable and only a couple ('aposematic' and 'spermatophore' might puzzle some readers) are left unexplained. The introductory chapters are somewhat uneven: a one and a half page chapter on butterflies as pests could have been more tidily absorbed into the section in the first chapter on the importance of butterflies.

Oddly, the latter fails to mention the growing trade in butterfly livestock for butterfly houses and entomological dealers in Europe, America and the Far East, currently amounting to tens of millions of dollars a year and making small but useful contributions to export earnings in tropical countries. There is potential here for sustainable use of forest biodiversity for the benefit of local communities and for conservation education: it would have been interesting to discuss this in the Kenyan context.

By far the most detailed chapter is on the biogeography of African butterflies. This is based largely on Carcasson's classic paper on the topic but is enriched by Larsen's considerable experience of collecting throughout the continent. Much of the text here consists of species lists which make for dry reading and awkward reference. They would have been better presented in tabular form. The last section in this chapter places the diversity of Kenyan butterflies in perspective both on a global and on a continental level: with the current high level of interest in biodiversity, many will find the data on numbers of species in different zoogeographical zones and selected countries highly useful.

A few items brought me up short: can it be true that the chief function of the 8 simple eyes of caterpillars is for guaging the height of a plant should the caterpillar fall? Is Gazi half way between Mombassa and Nairobi? (In fact there is another Gazi which almost is, but the more familiar one is on the south coast). Does *Charaxes chepalungu* hold the Kenyan record for the highest number of different colour pattern forms with only six of them? Is the discussion on *Papilio jacksoni* on p 26 supposed to illustrate the way male-male competition *might* work or as an example of how it *does* work? (The issue of male-male competition versus female choice in sexual selection in butterflies is highly controversial and Jackson's Swallowtail hås never been investigated in this respect. Larsen tries to have it both ways, dismissing female choice with respect to male colour pattern on the grounds that most butterfly mating is rape, and then resurrecting it with respect to male pheromones (sexual perfumes) on the grounds that females can exercise a veto at close proximity. There are echoes here of the kind of male double-think which has put rape trial judges in hot water with the feminist movement.)

These are, however, minor complaints. The major purpose of the book is to enable interested people not only to identify Kenyan butterflies with confidence but also to learn something of their individual biology, ecology and behaviour. Torben Larsen has succeeded in this, and has brought together a scattered literature and a great deal of unpublished observations, making them available to scientist and layman alike. I will not be alone in being extremely glad that he has done so. The ecological and behavioural notes give fascinating glimpses of the challenges that the study of butterflies presents, and the colour plates are excellent.

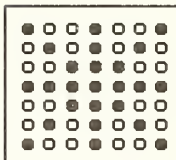
As an identification guide for Kenyan butterflies, this book has no rival. Its publication is timely as interest grows in the astonishing diversity of tropical insects (a single site in Brazil has over 1600 species of butterflies!), and as concern deepens over the destruction of tropical forests.

I was delighted to learn that copies of *The Butterflies of Kenya* at the Sarit Textbook Centre were already sold out, even at 5,800 shillings each, and even happier to hear that

new copies will be available in January next year, possibly (hopefully!) at a lower price. If you haven't got this book already, make it a New Year's present to yourself in 1993.

Ian J. Gordon, P.O. Box 30197, Nairobi

Editor's Note
Larsen expresses the hope that his book will inspire the publication of studies on Kenyan butterflies. The Bulletin would welcome supplementary information, tips on how to separate the more difficult species, field observations and (especially!) local lists. Members of the EANHS should be able to do for Kenyan butterflies what they have already done for Kenyan birds.



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Journals on Natural History

Almost everyone interested in natural history has at some stage wanted to get hold of a copy of a specific journal article on their particular interest - whether it is the hunting behaviour of wild dogs or the propagation of the Madagascan periwinkle. It can be very frustrating to come across a reference to the ideal article, and yet be unable to obtain it.
The British council international photocopy service, available through the British Council, exists to meet this need. The library (in UK) buys a copy of virtually every serious journal published anywhere in the world, and will photocopy any article on request, and post it to Kenya.
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JOURNAL:
The Society publishes, in collaboration with the National Museums of Kenya, the Journal of East Africa Natural History. The Journal is published twice a year. Contributions, typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, P.O. Box 44486, Nairobi, Kenya. Authors receive twenty-five copies of their article free.

EANHS BULLETIN:
This is a printed magazine issued four times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS Bulletin), P.O. Box 44486, Nairobi, Kenya. Line drawings can be published. Photographs will be considered if they are essential to the article.

SCOPUS:
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THE EAST AFRICAN NATURAL HISTORY SOCIETY

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